BAHRIA UNIVERSITY
PROSPECTUS

Bahria University
Discovering Knowledge

A PROJECT OF PAKISTAN NAVY

CONTENTS

DR. ARIF ALVI

CHANCELLOR BAHRIA UNIVERISTY

THE PRESIDENT OF PAKISTAN

MESSAGE OF
PRO CHANCELLOR

Bahria University is a flagship project of Pakistan Navy envisioned to promote the indispensable cause of quality and multidisciplinary Higher Education in country. The University has embarked on a remarkable journey from its inception. Just over the span of two decades, it stands among the reputable universities of Pakistan. It is heartening to note that the university has become a center of excellence for knowledge and research in multiple academic disciplines. The University has kept its custom of taking lead in adoption of modern teaching pedagogies and investing in facilities featuring dedicated modern infrastructure, equipped with cutting edge technologies to ensure conducive environment with the aim to become the benchmark of academic excellence. Pakistan Navy acknowledges the support of all stakeholders and I am delighted to share that Pakistan Navy is focused on building the future of motherland and will continue with high spirits.

The founding father of Pakistan – Muhammad Ali Jinnah (RA) considered youth as the greatest asset of nation and relentlessly emphasized on the education and development of youth for a promising future. To achieve Quaid's objective, Bahria University must focus on wholesome grooming of its students through personal and professional development along with delivery of quality education. The University Alumni's are distinguished with characteristics of Competency, Ethics, Morality and Subject Knowledge.

I would encourage the Youth of Pakistan to enroll for Higher Education to be a complete person, a responsible citizen and a valuable asset for the country.

Admiral Muhammad Amjad Khan Niazi NI (M) S Bt
Pro - Chancellor Bahria University
Chief of the Naval Staff

RECTOR'S
MESSAGE

Bahria University is one of the leading public sector universities of Pakistan, which is dedicated to meet many complex challenges facing us today. The university has campuses, research institutes and colleges all over Pakistan which work towards grooming today's youth into becoming tomorrow's leaders. We provide a platform for promising minds to come together, pioneer new thought and serve the world around them. And for this we provide the right mix of faculty, resources, environments and technology so that both learners and teachers are inspired to create, to explore, to discover, to challenge and to lead. At Bahria it is our vision to make our university the best educational institute in the country. Our strategy to achieve this vision is to ensure that theory and practice go hand in hand. We would like to open all the doors for promoting the research potential of the students, which will enable them to use their academic knowledge for practical projects. To this end we have built bridges between the University and the corporate sector, opening the way for research, and making students apply their academic skills to practical projects.

And we aim for all this to take place in a university environment that is safe and friendly, and at the same time disciplined, as envisaged by the Quaid e Azam. Because we feel that along with studies it is equally important to develop the good old values of character, decency, honesty and consideration for one another.

We believe that young people should have a say in shaping their destinies, we therefore help them to discover their potential, prepare for life and help make a positive impact on the world around them. The unusually high youth population of Pakistan presents a wonderful opportunity for us to play a role in motivating young people to be passionate about rendering positive service to society, and make them be able to do so. Because real fulfillment for any person lies in service to his fellow human beings.

We are headed for a future in which educational institutions will increasingly be judged by the quality of the education they provide, by the kind of people they graduate and by the way in which those graduates choose to lead their lives. And we at Bahria University have been striving constantly to meet these challenges.

Vice Admiral (R) Kaleem Shaukat HI (M)
Rector Bahria University

DISCOVERING
KNOWLEDGE

Bahria University **Organogram**
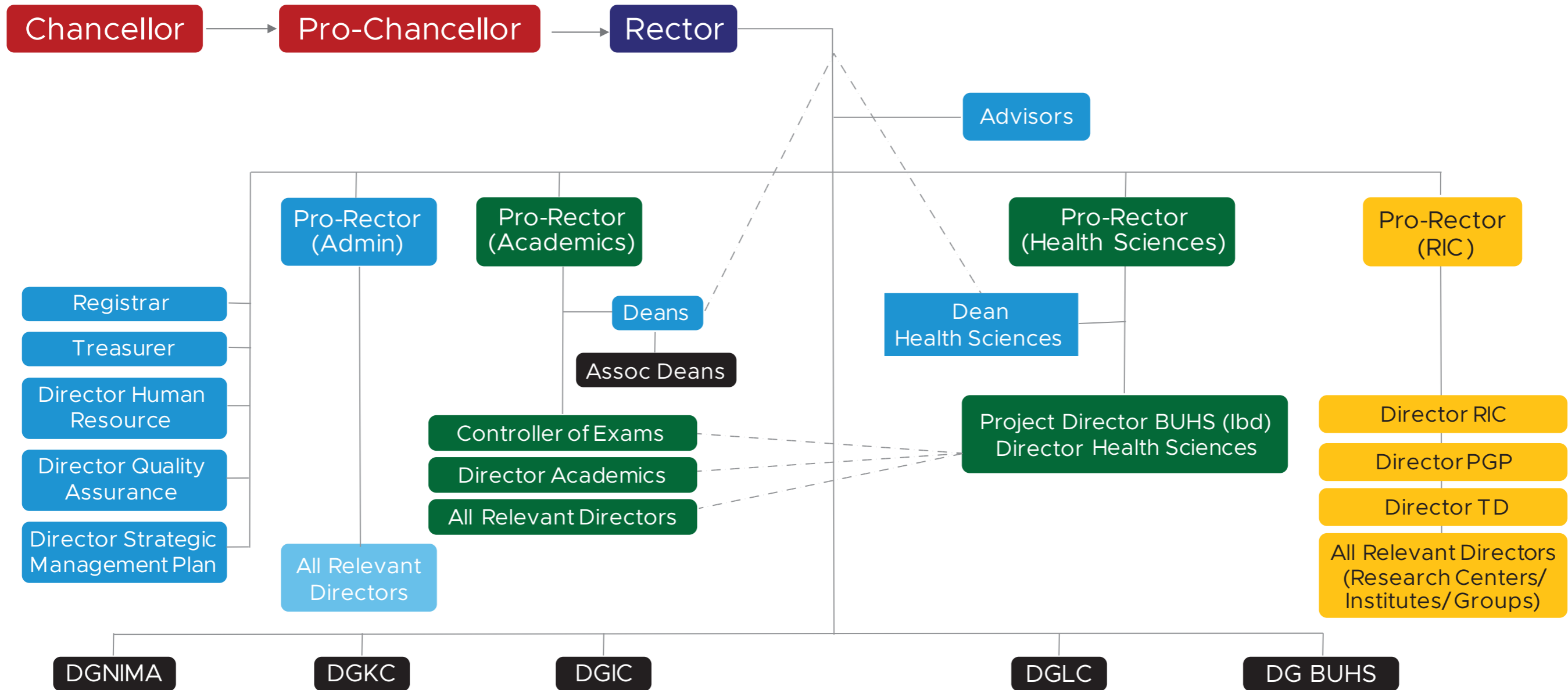
BAHRIA
AT A GLANCE

About US
Bahria University is a Federally Chartered Public-Sector Non-Profitable institution established on 7th February 2000 through a Presidential Ordinance. Being a multi-campus (Isb/Lhr/Khi) institution of higher education, we aim to attain highest standards in teaching, learning and research that fall in accordance with global compatibility.

VISION
To become a knowledge and creativity driven international university that contributes towards development of society.

MISSION
To ensure academic excellence through deliverance of quality education and applied research in a collegiate environment having strong linkages with industry and international community to meet the societal challenges.

CORE VALUES
Integrity
Creativity
Excellence
Positivity
Tolerance
Humility
Self-Discipline

STRATEGIC GOALS

Excellence in Education
The aim is to offer students a transformational educational experience, encompassing both the academic and the co-curricular activities, which provides them with the opportunity to fulfill their potential as successful professionals in life.

Excellence in Research
The aim is to develop and sustain an environment where research is viewed and practiced as a primary function that will subsequently contribute towards the vitalization of teaching, by discovery of new knowledge, and improving people's life in our country and abroad.

Excellence in Global Reach
The aim is to thrive for a global presence by equipping students, staff and faculty with the global knowledge and expertise to become a world renowned university.

Engaging with Business/ Industry
The aim is to maximize the impact of our excellence in education and research by engaging effectively with business/ industry in a way that benefits staff, students, faculty and alumni to provide sustainable growth in our income from government and non-government sources

Improving & Ensuring the University's Financial Security
The aim is to enhance existing income streams and develop diversified means of income generation for the financial sustainability of the university.

Excellence in Social Integration
The aim is to commit our self towards development of our local communities, and foster an environment where the staff, students and faculty see themselves as part of the larger, global community.

Why
BU

Highly Qualified &
Experienced Faculty

Strong Industrial &
International Academia
Linkages

45
International
Linkages

Research
Funding Over
PKR **240**
Million

19000+
Students

Scholarship
Grants worth
PKR **164+**
Million

BAHRIA UNIVERSITY

Bahria University is a Federally Chartered Public Sector University which was established on 7th February 2000 through a Presidential Ordinance. It is a multi-campus institution of higher education, which is committed to attain the highest standards in teaching, learning and research, compatible with global requirements of practicing different professions. The University is widely recognized for preparing professionals, to assume roles as future leaders and to become good executives/ managers through development of their physical, mental, moral and professional competence. The enrollment of students has crossed 19,000+ in the campuses located in Islamabad, Karachi and Lahore.

ISLAMABAD

LAHORE

KARACHI
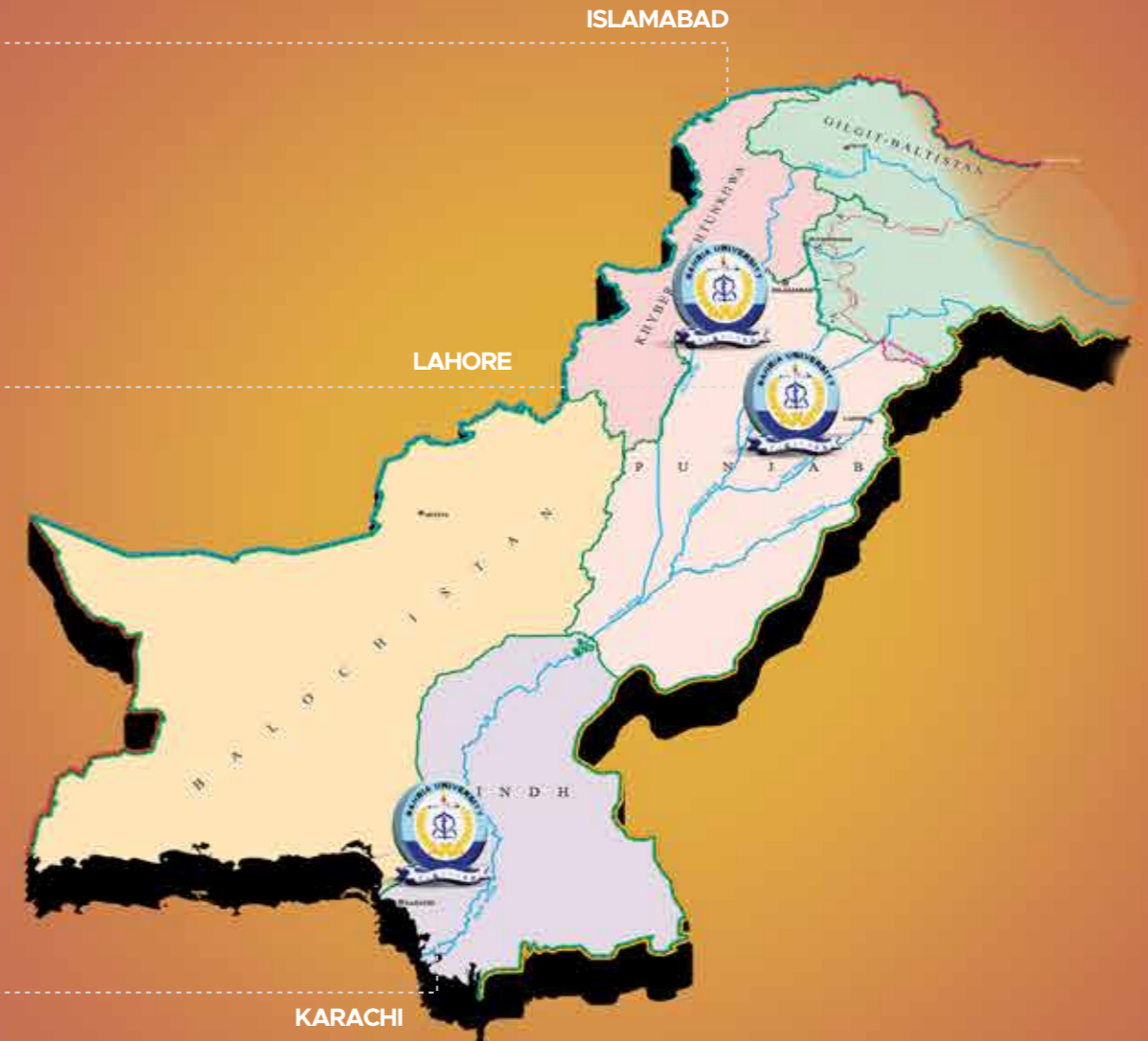
ISLAMABAD
CAMPUS

Bahria University Islamabad Campus (BUIC) is one of the most renowned institutions of higher education in Islamabad. Hosting over 7,000 students, BUIC provides access to higher education for promising students. There are two campuses at Islamabad. The old campus is situated at Sector E-8 Islamabad, whereas, the new campus has recently been built and commissioned at Sector H-11/4 (behind HQ NESCOM) imparting education & training to over 1600 students from Fall 2021 semester. The old Islamabad campus houses three schools; Bahria Business School (BBS), Bahria Humanities & Social Sciences School (BH3S), Bahria University Law School (BULS) and Department of Professional Psychology. The new campus at H-11 houses Bahria School of Engineering & Applied Sciences (BSEAS). Our vibrant Campuses in the heart of the city serves a rapidly-growing number of rural students from the immediate area and surrounding provinces. The changes taking place at the university continue to capture the imagination of people everywhere, including the international media, and our growing base of international universities. Inspiring excellence. Transforming lives. These objectives are the driving forces at the heart of BUIC. Through our Project, we are a university internationally recognized for human reconciliation and compassion as well as for excellence in academic achievement.

Bahria Univeristy E-8 Campus
Shangrilla Road, Sector E-8 Islamabad
+92-51-111-111-028
info@bahria.edu.pk

Bahria University H-11 Campus
BSEAS, BUIC (H-11) Sector H-11/4, Islamabad
+92-51-9259503
info@bahria.edu.pk

LAHORE
CAMPUS

Bahria University Lahore Campus (BULC) is a student-centered, globally-engaged public university committed to providing highly-valued undergraduate and graduate educational opportunities through superior teaching, research, creative activity and service for the people of Pakistan and the world. BULC is committed to being an outstanding teaching-intensive, research-driven university that emphasizes student engagement, scholarly and creative achievement, civic participation, and global perspectives. The Campus is widely recognized for its high quality of services, activities and programs for students. It has strong partnerships with faculty, student and community groups so that we may serve as primary advocates to meet the needs of our diverse student population. The core values of the institution includes Educational Opportunity, Excellence, Diversity integrity and service.

🏛 47 C, Civic Center, Johar Town Lahore
📞 +92-42-99233408-15
✉ info@bahria.edu.pk
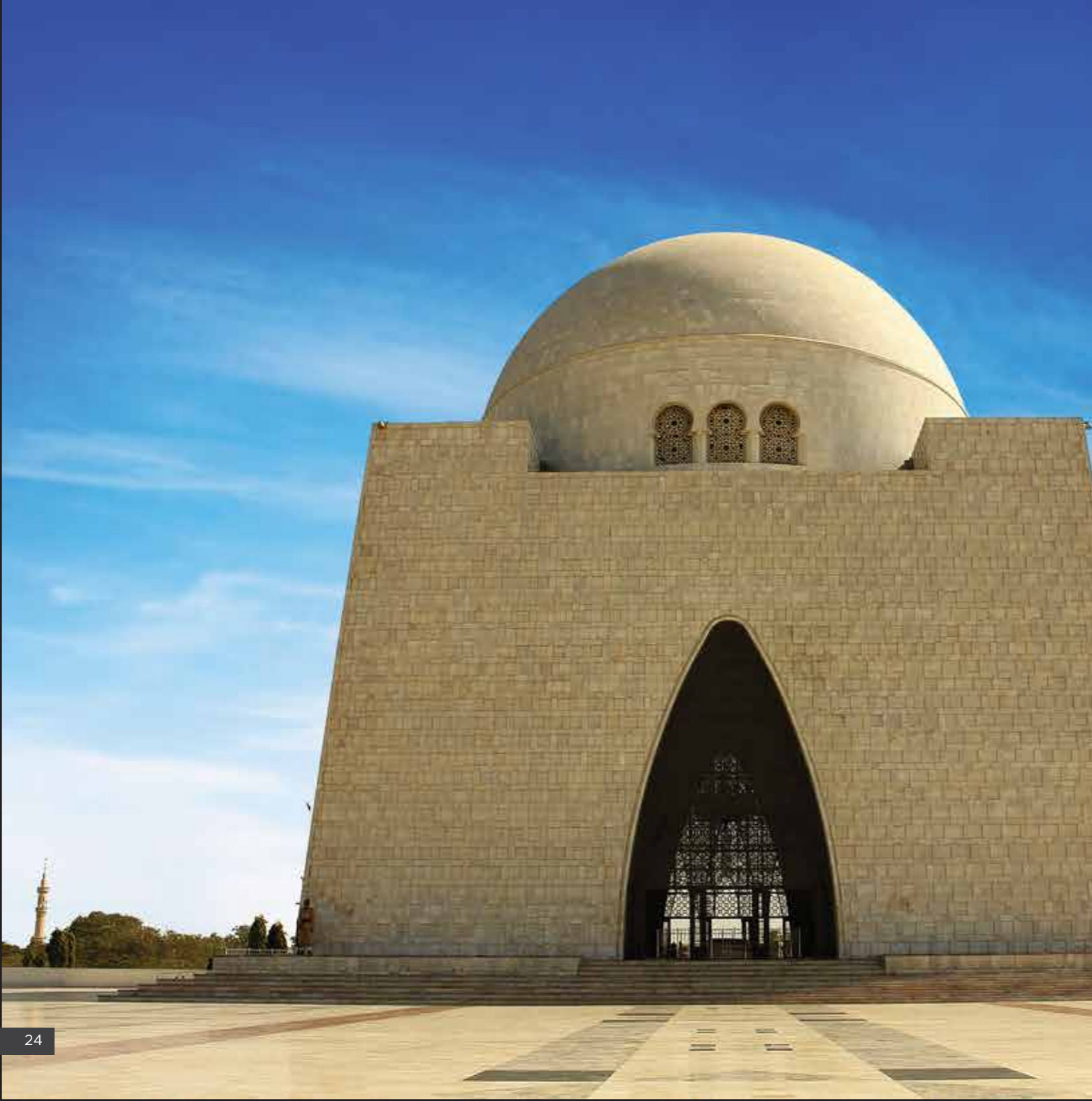
Bahria University Karachi Campus (BUKC)

Bahria University Karachi Campus (BUKC) was founded with a purpose: to create economic, societal and intellectual prosperity for the people of Karachi and the country. The campus houses three schools; Bahria Business School (BBS), Bahria School of Engineering & Applied Sciences (BSEAS) and, Bahria Humanities & Social Sciences School (BH3S). We began as an institution teaching wide range of subjects including Management Sciences, Computer Sciences, Software Engineering, Computer Engineering, Electrical Engineering and Media Studies. The Karachi campus has students, faculty and staff¬ take problems in hand and work with industry, and government to solve them. Our high-performing students apply what they learn in the real world by conducting research, working in internships and co-ops, and performing acts of world-changing service. That experiential education ensures they leave here ready to lead the workforce, con dent in the knowledge that Bahria University consistently rates as one of the best values in higher education.

🏛 13 National Stadium Rd, Karachi
📞 +92-21-111-111-028
✉ info@bahria.edu.pk

Bahria University Health Sciences (BUHS)

Bahria University Health Sciences (BUHS) Campus was established in 2008 with the induction of experienced and highly qualified faculty. The state-of-the-art 7-storey building houses 5 lecture halls each with a capacity of 150 seats and a beautiful auditorium with a seating capacity of 500. There are fully equipped laboratories, museums, dedicated teaching rooms for group teaching and a skills laboratory. BUHS strictly follows the curriculum speci ed by the Pakistan Medical and Dental Council.

🏛 Adjacent to PNS SHIFA, DHA Phase-ll, Karachi
📞 +92-21-35319491-9
✉ info.bumdc@bahria.edu.pk

KARACHI
CAMPUS

Institue of Professional Psychology

The Institute of Professional Psychology (IPP) at Bahria University functions as an educational setup focusing on career development of its students. Students and faculty members alike are actively involved in community work with a dual purpose – that of serving the community and of meeting experiential requirements for various courses. The clinical outpatient department at PNS Shifa provides assessment and a number of di¬erent therapeutic plans that are tailored to suit the individual's needs. In addition to clinical practice, the Institute is also actively involved in providing assessment and counseling services to various multinational concerns. Di¬erent projects have been initiated for community welfare in collaboration with an NGO to provide counseling services to jail inmates.

13 National Stadium Rd, Karachi
+92-21-111-111-028
info@bahria.edu.pk

ISLAMABAD
CAMPUS

National Institute of Maritime Affairs (NIMA)

National Institute of Maritime Affairs (NIMA) had been set up at the Bahria University, Islamabad Campus with a view to encourage research in maritime matters. NIMA has accordingly developed linkages with various international universities and maritime research institutes. It has also hosted a number of international seminars, conferences and workshops, high-lighting various aspects of the maritime domain.

Bahria Univeristy E-8 Campus
Shangrilla Road, Sector E-8 Islamabad
+92-51-111-111-028
info@bahria.edu.pk

Scholarships

Bahria University Scholarship Policy has been framed with the objective to assist students with their educational expenses. The University aims to provide equal opportunity for all students to attain their goals/targets regardless of their financial position. Through university funding various scholarship schemes are off red to accommodate and honors eligible students. Following are the type of scholarships being offered by university from its own resources at UG and PG level excluding MBBS & BDS.

1. **Advance Merit Scholarship (For Outstanding Performers In Cambridge International Education (CIE's) System**

   Bahria University award scholarship @ 75% tuition fee to the top three students achieving minimum 03 A's in A Levels. Eligible students have to produce equivalence certificate issued from the Inter Board Committee of Chairmen (IBCC). For continuation of scholarship in the subsequent semesters the students are required to achieve a GPA of at least 3.75.

2. **Exemption Of Admission Fee To Bahria University Graduates/alumni For Higher Education At Bahria University**

   Bahria University graduate/Alumni are give n 100% Admission fee waiver for admission in MS/MPhil & PhD Programs.

3. **Tuition Fee Waiver To High Academic Achievers In Ms/mphil/phd Program Of Bahria University**

   Prospective students who have applied at Bahria University with 80% marks in case of annual examination or CGPA 3.50 in semester system, in last degree from HEC recognized National

4. **Advance Merit Scholarship for Board Toppers (For Undergraduate Programs)**

   Under Advance Me rit Scholarship Policy, Bahria University offers 75% tuition fee waiver/concession for the first semester, to top three toppers amongst all Boards of Intermediate and Secondary Education (BISE). This scholarship is for the entire program. However its continuation during the subsequent semesters will be subject to the condition that awardee must maintain his/her minimum GPA of 3.75

5. **Advance Merit Scholarship (Bahria University Entrance Test Based)**

   Top merit position holders in Bahria University admission merit list with respect to their respective discipline are awarded scholarships/fee waiver as per following criteria:

   a. **Undergraduate Programs**

      For Management Sciences, Engineering Programs (Top three scorers among all engineering programs) and Computer Sciences, following three top position holders are awarded scholarship/fee waiver. The student must obtain an aggregate score of at least 70% in the Bahria University Merit list.

      1st Position Holder 75% Tuition Fee wavier

      2nd Position Holder 50% Tuition Fee wavier

Scholarships

3rd Position Holder 30% Tuition Fee wavier

For Law, Earth &Environment Sciences, H&SS and Psychology, one top sorer from each department shall be considered for 75% Tuition fee waiver. The student must obtain an aggregate score of at least 70% in the Bahria University Entrance Merit list.

b. **Post Graduate Programs**

   The top scorer in Bahria University Merit List among all Post graduate (MBA/MS/or equivalent) programs excluding PhD for each campus are awarded 50% Tuition Fee waiver. The student must obtain an aggregate score of at least 70% in the Bahria University Merit list.

   For continuation of the scholarship in the subsequent semesters for the above categories the students are required to achieve a GPA of at least 3.75.
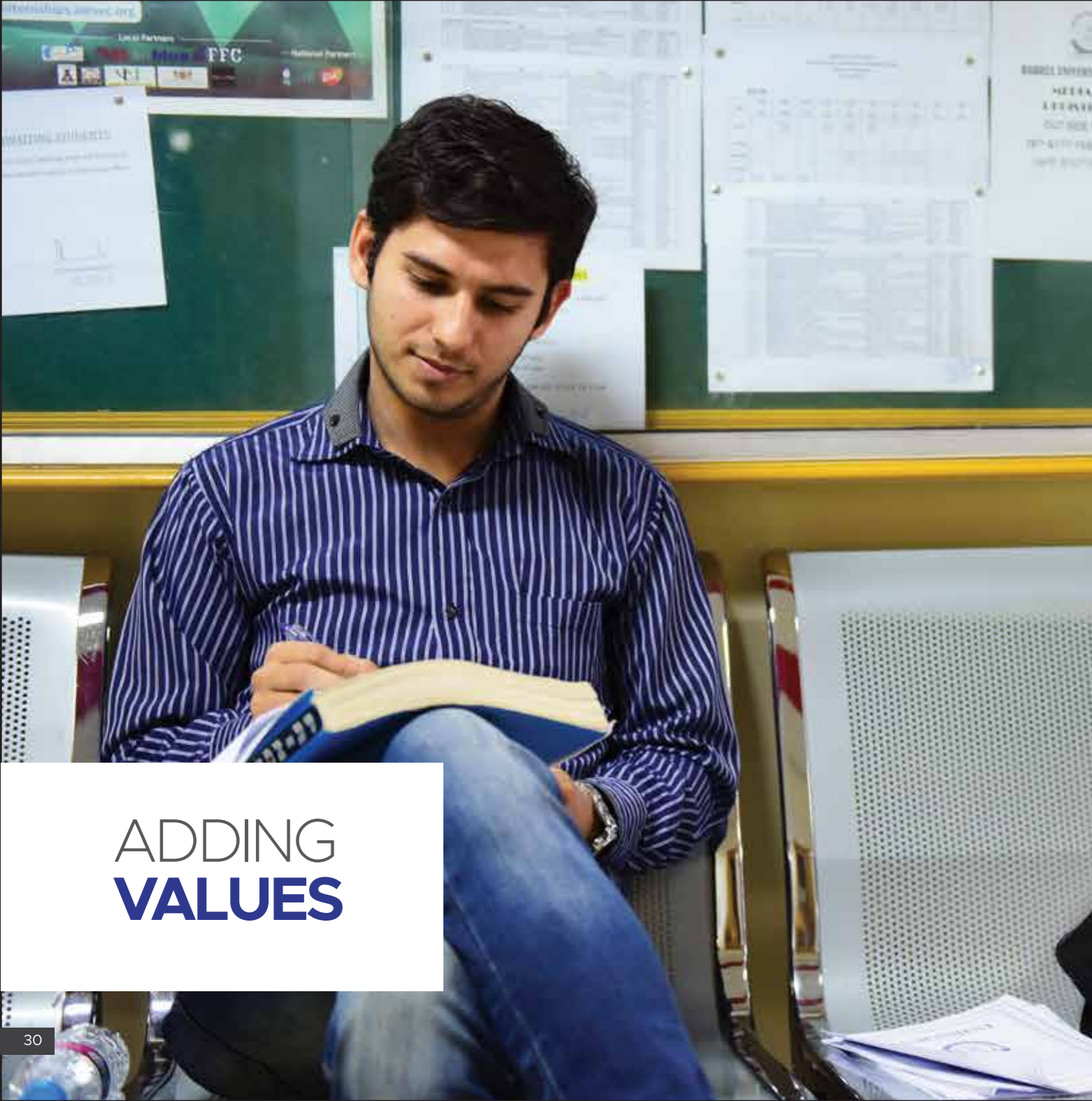
ADDING
VALUES

Learning & Teaching Methods:

Today Bahria University is considered to be one of Pakistan's 21st century, business-facing university. We are committed to giving our students the skills they need to succeed in the global marketplace.

We strive to develop the qualities of confidence, self-worth and high employable skills with in our students so that they can excel in the field they choose to work in We strive to achieve this by:

Combining traditional teaching methods by top academic staff with digital resources.

Teaching courses that are all designed with the input of business and professional bodies.

Giving students the change to learn about employability through listening to the experience of our alumni.

Organizing networking events where staff, students and graduates can meet.

Offering a vibrant multicultural campus.

Giving students the option of studying at one of our partner universities overseas.

Offering students valuable work experience in research, business or industry before their final academic year.

One of our aims is to bring higher education to a wider audience. We provide flexible learning opportunities for local residents and businesses, including:

Evening classes, summer schools and short courses at community venues

Public lectures and workshops

Part-time study, continuing education program, and new foundation degrees.

Career Office

Bahria University remains committed in providing not only quality academic services but also offers career services that include employment opportunities, professional grooming and counseling to its students and alumni. The Office of Student Affairs and Career Services keeps on strengthening academic linkages with industry in order to provide the market with our talented and skilled graduates as valuable workforce. Dedicated staff has been appointed in all BU Campuses to facilitate students and Alumni in best possible way. A very efficient mechanism is followed where the students and alumni are assisted in choosing the right career paths and future goals. BU strive hard to meet the very dynamic requirements of job market and graduates by creating innovative ways of bridging the gap of academic world and industry. The Office of Student Affairs and Career Services acts as a central hub for its students and alumni and apart from routine job alerts, it organizes various training programs, seminars and workshops by inviting market professionals who share their expert opinion and experiences which helps the students in building a deep insight of the corporate world.

Career Counseling can help you:

- discuss your interest /profession
- discover what you can do along with your major
- learn the way to investigate profession fields, industries, and employers
- discover what an internship is, why you want one, and the way to get one
- Critique your resume
- develop networking talents

Getting Professional:

Professionalism, Evaluation & Learning Professionalism is a cornerstone of any organization and is essential to achieving excellence in research, education, clinical care and university and community service. It requires an ongoing commitment to honesty, integrity, respect, altruism, accountability, compassion, empathy and self-improvement. Bahria University reaffirms this commitment to a climate of respect, civility and cooperation among students, interns, residents, faculty, administrators, staff and society. Programs and services offered by Bahria University support and enhance the goals to educate and oversee student's personal and professional accountability as well as to ensure academic success. These include

- Faculty-student mentoring programs
- Course and instructor evaluations
- Administration of the Learning Resource Center
- Academic enrichment intervention strategies,
- Supervision of exam proctors,
- Academic enhancement workshops.

Interactive Approach:

Interactive learning is a hands-on approach to help students become more engaged and retain more material. With or without a form of technology, interactive learning helps students strengthen problem solving and critical thinking skills,
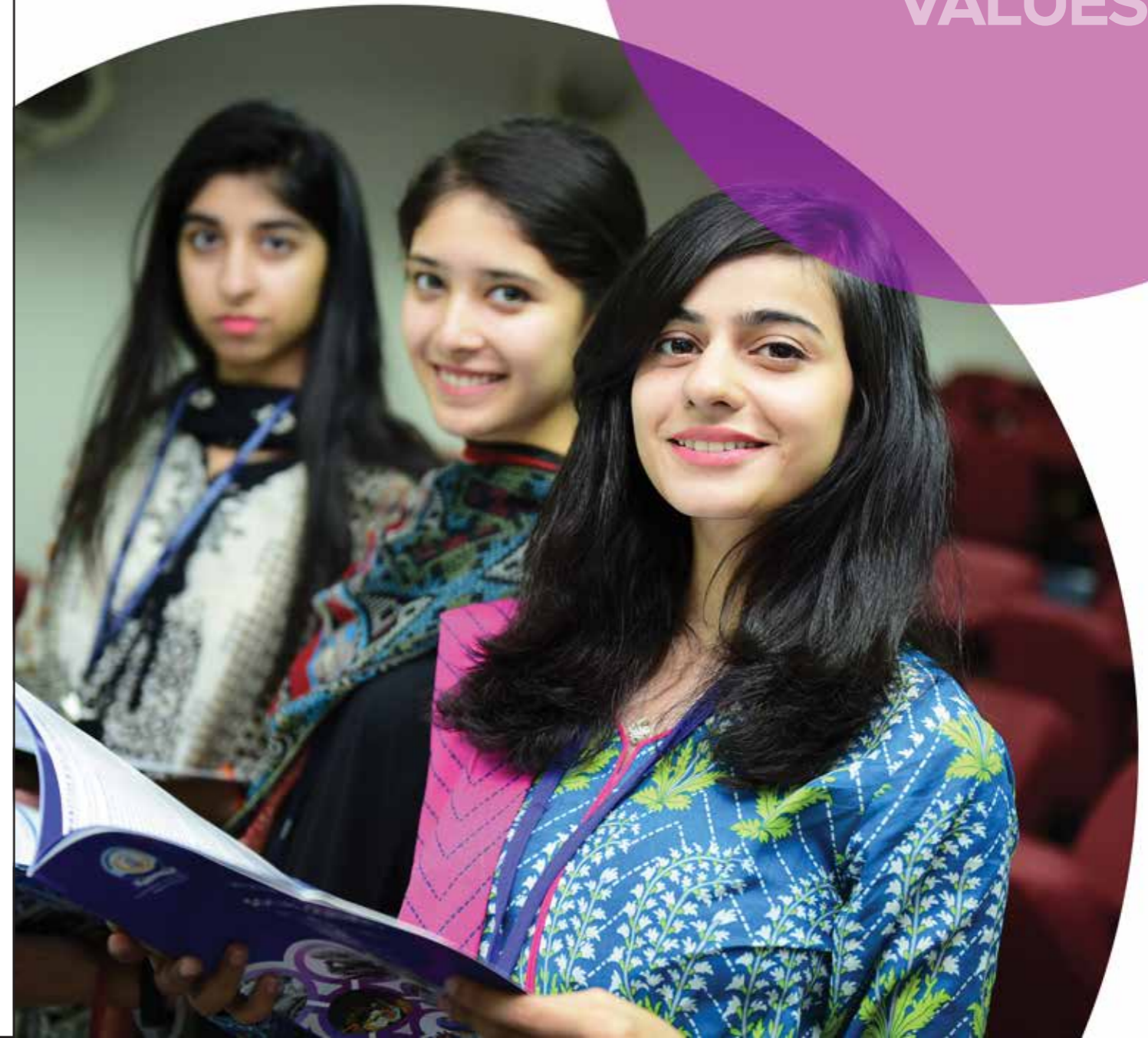
ADDING
VALUES

1. Brainstorming

Interactive brainstorming is typically performed in group sessions. The process is useful for generating creative thoughts and ideas. Brainstorming helps students learn to pull together. Types of interactive brainstorming include:

- Structured and unstructured
- Reverse or negative thinking
- Nominal group relationships
- Online interaction such as chat, forums and email
- Team-idea mapping
- Individual brainstorming

2. Think, Pair and Share

Establish a problem or a question. Pair the students. Give each pair sufficient time to form a conclusion. Permit each participant to define the conclusion in his or her personal voice. You can also request that one student explain a concept while the other student evaluates what is being learned. Apply different variations of the process.

3. Buzz session

Participants come together in session groups that focus on a single topic. Within each group, every student contributes thoughts and ideas. Encourage discussion and collaboration among the students within each group. Everyone should learn from one another's input and experiences.

4. Incident process

This teaching style involves a case study format, but the process is not as rigid as a full case study training session. The focus is on learning how to solve real problems that involve real people. Small groups of participants are provided details from actual incidents and then asked to develop a workable solution.

Personality Grooming:

Bahria University places strong emphasis on personality development of its graduates to improve their employability skills. In this regard a hybrid student grooming programme is in place focusing on both academic and non-academic activities. In terms of personality development through academic means, eight learning dimensions have been identified, that are covered in various subjects offered in the degree programmes at BU. This includes IT skills, numeracy skills, oral communication and public speaking skills, business communication skills, self-management, psychological & emotional development, career exploring and management and corporate skills. Understanding the importance of co-curricular activities, the university has also identified six personality dimensions that are focused for development in a student through various co-curricular activities including civic education, intellectual development, physical education, internationalization, social & emotional development and aesthetic development. So whether it is attending guest lectures by renowned speakers, participating in arts, dramatics, sports or music activities, they are all managed and planned in a way to ensure overall development of students' personality!

Facilities

Business Incubation Centre

Bahria Universities Business Incubation Centre (BIC) is dedicated to help students explore different spheres of research which include human needs, emerging technology and social trends. It seeks to create new ideas and businesses that are intuitive and enriching without losing sight of the experience and encounter. BIC tries to find a new sensibility that allows it to create products that focus on the augmentation of human capability and to further examine the boundaries between physical and mental limitations. Through projects that are self-initiated or developed in collaboration with industry, the Centre aims to experiment with and develop new design methods.

E- News Paper

The Bahria University Tribune, now published from Islamabad, is a try at your hand at journalistic writing or find out what it's like to work in the newspaper business? Students submit their articles on a weekly basis at The Tribune run by students. No matter what majors are, your participation is always welcomed.

FM Radio

BBahria University has the privilege to be among the few institutes in Pakistan to have its own FM Radio Channel. Functioning at the frequency of 106, the FM Radio provides an excellent opportunity for the students of Media Studies to get hands on experience in running and managing radio programs.

BU Media House

Bahria Media House is the project of BU to provide a platform for its students to showcase their talent and skills to the outer world through the medium of Web TV, FM Radio and Online Newspaper. The Media house equipped with State of the art facilities is the idyllic place for the pupils to pursue their dreams in the world of digitalization. Bahria University is creating artwork in a range of applications that include prospectuses/ catalogues and brochures and magazines.

BUTV

BUTV is Bahria University's student-operated media production network. Live-streamed programming is available at bahria.edu.pk and on campus television channel. BUTV produces an array of news, information, sports and variety programming. Open to any BU student is its annual membership. BUTV productions and administrative departments are based at the Bahria University Media House and Media Studies Department.

Networking Pertners

Libraries

The Bahria University libraries aim to encourage and support academic and research activities of university researchers, faculty, staff and students. They provide a full range of services, including books loans, online information searching, reference services, photocopying, access to digital resources, CD searching and research support services, i.e. Endnote training and APA style manual, etc. The libraries are managed by qualified and experienced staff, dedicated to provide quality services for its users.

INTERNATIONAL LINKAGES

UNITED KINGDOM
- University of Plymouth
- University of Bedfordshire
- University of Greenwich
- University of Leicester
- University of Nottingham
- University of Northampton
- York St. John University
- Corbett Cent – King's College
- Southampton Solent University
- Brunel University

UNITED STATES OF AMERICA
- MIT (Resource Sharing)
- University of Idaho
- Valparaiso University

NETHERLANDS
- Amsterdam University of Applied Sciences

CANADA
- Dalhouse University

CHINA
- Hangzhou Dianzi University
- Shanghai Lixin University
- Beijing Technology & Business University

BANGLADESH
- International University of Business, Agricultural & Technology

IRAN
- Chabahar Maritime University
- Damghan University

ITLAY
- Trieste University

AUSTRALIA
- Griffith University
- Macquarie University
- Edith Cowan University

MALAYSIA
- AIMST University

THAILAND
- Burapha University

TURKEY
- Izmir University of Economics
- Istanbul Kemerburgaz University
- Istanbul Aydin University
- Dogus University
- Yasar University
- Erzurum Technical University
- Hakkari University
- University of Sirnak

Internationalization is functioning at the heart of BU. Our University is one of the first few universities of the country that has a formal International Office setup to look after academic linkages and ties with international universities. The journey of internationalization of BU is now over a decade old with number academic partnerships in countries such as UK, USA, Australia, Canada, China, Turkey, Netherlands, Italy, Malaysia, Bangladesh, Iran & Thailand. There are several opportunities for the students of Bahria University to avail international experience through guest lectures by foreign speakers, short study tours to partner

Universities, participation in international conferences, attending international internships programmes, exchange of students for a semester with universities in Turkey, Australia & UK, credit transfer opportunities to selected partner universities on a 3+1 and 2+2 articulation arrangements, international summer school programmes and many more. To view list of existing partner universities of BU, please visit the University website. All international opportunities are advertised through International Office online portal available at www.bahria.edu.pk/internationalopportunities.

Research at
Bahria University

Exploring the new trends and new facets of higher education and research has assumed added significance in the globalized world of the twenty-first century. Since the strength of today's economies is increasingly based on how well they can harness knowledge and expertise, the role of the higher education system has become crucial in international competition. BU undergraduates pursue independent research through personal Research Consultations and administration of competitive research grants. Bahria University as one of the Pakistan's leading universities, has a broad array of faculty conducting cutting-edge research in all disciplines. BU undergraduates become involved in research by identifying resources, narrowing search, and shaping initial inquiries. Increase in international mobility in tertiary education, gave rise to new modes of competition within higher education and research. This situation stems from the technological revolution in communications, developments in science, as well as the very nature of knowledge, which now operates via accumulation and paradigm shift. Economic competition, Competition amongst academic and research institution and diversification & modernization are the three major trends that impose the importance of Research at Bahria University.

Life at Bahria

The BU Experience

Want to know what it's really like to be a student at Bahria University?

Bahria University focuses on strong academic grooming of the students along with emphasis on individual development by engaging them in various curricular & co-curricular activities. Bahria support individuals to achieve their goals and make them move forward their professional life. These are the opportunities which everybody is looking forward to enhance their knowledge base & soft skills.

Student life & Engagement is dedicated to offering modern programs to help students get involved on campus giving vast opportunities to expand leadership skills and pursue their future goals. The university works in close liaison with international partner universities to provide international exposure to our students.

Sports
at **BU**

The importance of sports in the life of students is invaluable and plays a pivotal role in their overall development. With this perspective in view, the university provides many opportunities and facilities to its students to participate in international, national and university level sports.

A state of the art Gymnasium having wide range of indoor games facilities: courts for basketball, volley ball, badminton, a fitness room equipped with the latest machines is available at Islamabad Campus.

Music at **BU**

Extra-curricular activities including music are an integral part of life on the campus. Undergraduates, postgraduates, alumni and staff all contribute to the rich musical life of the University. Music Club is a student-run body comprising of a number of talented students of the university. The main objective of the music club is to expose and nurture the hidden talent of the students and giving the confidence to represent them nationwide as proud BU students. We are proud of this music heritage of the university that has produced world class singers such as Umair Jaswal, Uzair Jaswal and Shamir Aziz Quidwai. Groups and individuals are open to express their talent anytime.

Dramatics at
Bahria University

Dramatic Arts education is an important means of stimulating creativity in problem solving. It can challenge student's perception, about their world and about themselves. Dramatic exploration can provide students with an outlet for emotions, thoughts, and dreams that they might not otherwise have means to express. A student can, if only for a few moments, become another, explore a new role, try out and experiment with various personal choices and solutions to very real problems from their own life, or problems faced by characters in literature or historical figures. This is perhaps the most important reason for Dramatic Arts in schools. Theater and Drama has also been a major part of our culture since the very beginning. BU has always provided means by which students can actively participate in the activities and express their different personalities.

Bahria University's Dramatics club is the Centre of attention. The club enables the students to polish their hidden talent performing live and is thus helping students to promote the culture in a positive manner. A huge body of students interested in performing live in theatres is encouraged by the administration of the university. Plays are being arranged in which students express themselves by performing on the most sensitive societal issues. It is not a 'traditional' drama society in the sense, but is made up of a committee which meets every week to discuss funding for shows and to make decisions which improve opportunities for drama across the University.

Well-Being Center
Trauma Therapy Unit (TTU)

The Well-Being Center (WBC) is committed to provide best mental health services to Bahria University, as well as to the outsiders in need of psychological, social, emotional, and developmental needs. At WBC we ensure high quality, problem focused and ethical services. WBC team offers free support to all enrolled students, Faculty and Staff experiencing distress arising from psychological, emotional or mental health issues on minimal cast.

Student Support Centre (SSC)

SSC is the hub of all non-academic activities and student centered services to maximize student potential by polishing student talents and skills, developing them into all-rounders with grooming interventions, self-help resources, interactive workshops and participation outside university. The Student Support Centre has a system under which it operates and provide support to students through following three wings:

• The Student Facilitation Centre
• Community Support Program
• Students Resource Centre

Programmes Offered

- Institute of Professional Psychology (IPP)
- Bahria University Health Sciences (BUHS)
- Bahria University — Discovering Knowledge
- Islamabad Campus
- Karachi Campus
- Lahore Campus

PROGRAMS OFFERED IN FALL SEMESTER

Bahria University Islamabad Campus (BUIC)

1. Bahria Business School (BBS)

Business Studies

- **BBA** (4 Years)
- **MBA** (1.5 Years)
- **MBA** (2 Years)

Management Studies

- **BS** (Accounting & Finance)
- **BS** (Economics)
- **BS** (Supply Chain Management)
- **MPhil** (Management Sciences)
- **MS** (Finance)
- **MS** (Project Management)
- **MS** (Supply Chain Management)
- **MS** (Economics)
- **MS** (Management Sciences)
- **PhD** (Management Sciences)
- **PhD** (Economics)

2. Bahria School of Engineering and Applied Sciences (BSEAS)

BUIC H-11 Campus

Electrical Engineering

- **Bachelors** (Electrical Engineering)
- **MS** (Electrical Engineering)
- **PhD** (Electrical Engineering)

Software Engineering

- **Bachelors** (Software Engineering)
- **MS** (Software Engineering)
- **MS** (Engineering Management)
- **PhD** (Software Engineering)

Computer Engineering

- **Bachelors** (Computer Engineering)
- **MS** (Computer Engineering)
- **PhD** (Computer Engineering)

BUIC E-8 Campus

Computer Sciences

- **BS** (Computer Science)
- **BS** (Artificial Intelligence)
- **BS** (Information Technology)
- **MS** (Computer Science)
- **MS** (Information Security)
- **MS** (Mathematics)
- **MS** (Telecom & Networks)
- **MS** (Data Science)
- **PhD** (Computer Science)
- **PhD** (Mathematics)

BUIC H-11 Campus

Earth & Environmental Sciences

- **BS** (Geology)
- **BS** (Geophysics)
- **BS** (Environmental Sciences)
- **MS** (Geology)
- **MS** (Geophysics)
- **MS** (Environmental Sciences)

- **PhD** (Geophysics)
- **PhD** (Environmental Sciences)
- **PhD** (Geology)

3. **Bahria Humanities and Social Sciences School (BH3S)**

Humanities & Social Sciences

- **Bachelors** in Social Sciences
  - International Relations
  - Development Studies
  - Anthropology
  - Sociology
- **BS** (Public Health)
- **BS** (English)
- **MS** (Applied Anthropology)
- **MS** (International Relations)
- **PhD** (International Relations)

Media Studies

- **BS** (Media Studies)
- **BS** (TV Broadcasting & Digital Media)
- **MS** (Media Studies)
- **PhD** (Media Studies)

Islamic Studies

- **MS** Islamic Studies (Islam & Life)

Professional Psychology

- **BS** (Psychology)
- **MS** (Clinical Psychology)
- **PhD** (Clinical Psychology)

4. **Bahria University Law School (BULS)**

Department of Undergraduate Program

- **LLB**

Department of Post Graduate Program

- **LLM** (General)
- **PhD** (Law)

Bahria University Karachi Campus (BUKC)

1. **Bahria Business School (BBS)**

Business Studies

- **BBA** (4 Years)
- **BBA** (2 Years)
- **MBA** (1.5 Years)
- **MBA** (2 Years)
- **MBA** (Pharmaceutics & Health Management)

Management Studies

- **BS** (Accounting & Finance)
- **BS** (Economics & Finance)
- **BS** (Supply Chain Management)
- **MS** (Finance)
- **M.Phil** (Management Sciences)
- **MS** (Project Management)
- **MS** (HRM & Organizational Psychology)
- **PhD** (Management Sciences)

Maritime Sciences

- **BS** (Maritime & Business Management) 4 Years
- **BS** (Maritime & Business Management) 2 Years
- **MS** (Maritime Ports & Shipping Management)

- **MS** (Maritime Trade & Logistics)

2. **Bahria School of Engineering and Applied Sciences (BSEAS)**

Electrical Engineering

- **Bachelors** (Electrical Engineering)
- **MS** (Electrical Engineering)
- **PhD** (Electrical Engineering)

Software Engineering

- **Bachelors** (Software Engineering)
- **MS** (Software Engineering)
- **PhD** (Software Engineering)

Computer Engineering

- **Bachelors** (Computer Engineering)

Computer Sciences

- **BS** (Computer Science)
- **BS** (Artificial Intelligence)
- **BS** (Information Technology)
- **MS** (Computer Science)
- **PhD** (Computer Science)

Earth & Environmental Sciences

- **BS** (Geophysics)
- **BS** (Geosciences)
- **BS** (Environmental Sciences)
- **MS** (Environmental Sciences)
- **MS** (Geophysics)

3. **Bahria Humanities and Social Sciences School (BH3S)**

Humanities & Social Sciences

- **Bachelors** in Social Sciences

- **BS** (Public Health)
- **BS** (English)

Media Studies

- **BS** (Media Studies)
- **MS** (Media Studies)

Islamic Studies

- **MS** Islamic Studies (Islam & Life)

Institute of Professional Psychology (IPP)

- **BS** (Psychology)
- **MS** (Clinical Psychology)
- **MPhil** (Professional Psychology)
- **PhD** (Professional Psychology)

Bahria University Health Sciences

Medical Collage

- **MBBS**
- **MPhil** Programs
  - **MPhil** Anatomy
  - **MPhil** Pharmacology
  - **MPhil** Pathology (Histopathology & Microbiology)
  - **MPhil** Biochemistry
  - **MPhil** Physiology
- **FCPS** Residency Programs
  - **Medical &** Allied Field
  - **Surgery &** Allied Field

- **Radiology**
- **Anesthesiology**

Dental Collage

- **BDS**
- **FCPS** Residency Programs
  - **OMFS**
  - **Operative** Dentistry

Collage of Physical Therapy

- **Doctor** of Physical Therapy

Collage of Allied Health Sciences

- **BS-**Medical Lab Technology BS-MLT

Bahria University Lahore Campus (BULC)

Management Sciences

- **BBA** (4 Yrs.)
- **MBA** (1.5)
- **MBA** (2 Yrs.)
- **MS** (Project Management)
- **MS** (Management Sciences)
- **PhD** (Management Sciences)

Psychology

- **BS** (Psychology)
- **MS** (Clinical Psychology)

Computer Sciences

- **BS** (Computer Science)
- **BS** (Information Technology)
- **MS** (Computer Science)

PROGRAMS OFFERED IN SPRING SEMESTER

Bahria University Islamabad Campus (BUIC)

1. **Bahria Business School (BBS)**

Business Studies

- **BBA** (4 Years)
- **MBA** (1.5 Years)
- **MBA** (2 Years)

Management Studies

- **BS** (Accounting & Finance)
- **BS** (Economics)
- **BS** (Supply Chain Management)
- **MPhil** (Management Sciences)
- **MS** (Finance)
- **MS** (Project Management)
- **MS** (Supply Chain Management)
- **MS** (Economics)
- **MS** (Marketing & Sales)
- **MS** (Management Sciences)
- **PhD** (Management Sciences)
- **PhD** (Economics)

2. **Bahria School of Engineering and Applied Sciences (BSEAS)**

BUIC H-11 Campus

Electrical Engineering

- **MS** (Electrical Engineering)
- **PhD** (Electrical Engineering)

Software Engineering

- **MS** (Software Engineering)
- **MS** (Engineering Management)
- **PhD** (Software Engineering)

BUIC E-8 Campus

Computer Sciences

- **BS** (Computer Science)
- **BS** (Artificial Intelligence)
- **BS** (Information Technology)
- **MS** (Computer Science)
- **MS** (Information Security)
- **MS** (Data Science)
- **PhD** (Computer Science)

BUIC H-11 Campus

Earth & Environmental Sciences

- **BS** Geology
- **BS** Geophysics
- **BS** Environmental Sciences
- **MS** Geology
- **MS** (Environmental Sciences)

3. Bahria Humanities and Social Sciences School (BH3S)

Humanities & Social Sciences

- **Bachelors** in Social Sciences
  - International Relations
  - Development Studies
  - Anthropology
  - Sociology
- **BS** Public Health
- **BS** English

- **MS** Applied Anthropology
- **MS** (International Relations)
- **PhD** (International Relations)

Media Studies

- **BS** (Media Studies)
- **BS** (TV Broadcasting)
- **MS** (Media Studies)
- **PhD** (Media Studies)

Islamic Studies

- **MS** Islamic Studies (Islam & Life)

Psychology

- **BS** Psychology

4. Bahria University Law School (BULS)

Department of Undergraduate Program

- **LLB**

Department of Post Graduate Program

- **LLM** (International & Maritime Laws)

Bahria University Karachi Campus (BUKC)

1. Bahria Business School (BBS)

Business Studies

- **BBA** (4 Years)
- **MBA** (1.5 Years)
- **MBA** (2 Years)
- **MBA** (Pharmaceutics & Health Management)

Management Studies

- **BS** (Accounting & Finance)
- **BS** (Supply Chain Management)
- **MS** (Project Management)
- **MS** (Management Sciences)
- **MS** (HRM & Organizational Psychology)
- **PhD** (Management Sciences)

Maritime Sciences

- **BS** (Maritime & Business Management) 4 Years

2. **Bahria School of Engineering and Applied Sciences (BSEAS)**

Electrical Engineering

- **MS** (Electrical Engineering)
- **PhD** (Electrical Engineering)

Software Engineering

- **MS** (Software Engineering)
- **PhD** (Software Engineering)

Computer Sciences

- **BS** (Computer Science)
- **BS** (Artificial Intelligence)
- **BS** (Information Technology)
- **MS** (Computer Science)
- **PhD** (Computer Science)

Earth & Environmental Sciences

- **BS** (Environmental Sciences)
- **MS** (Environmental Sciences)

3. **Bahria Humanities and Social Sciences School (BH3S)**

Humanities & Social Sciences

- **Bachelors** in Social Sciences
- **BS** (Public Health)
- **BS** (English)

Media Studies

- **BS** (Media Studies)

Islamic Studies

- **MS** Islamic Studies (Islam & Life)

Institute of Professional Psychology (IPP)

- **BS** (Psychology)
- **MS** (Clinical Psychology)
- **MPhil** (Professional Psychology)
- **PhD** (Professional Psychology)

Bahria University Health Sciences

Medical Collage

- **MBBS**
- **MPhil** Programs
  - **MPhil** Anatomy
  - **MPhil** Pharmacology
  - **MPhil** Pathology (Histopathology & Microbiology)
  - **MPhil** Biochemistry
  - **MPhil** Physiology
- **FCPS** Residency Programs
  - **Medical &** Allied Field

- **Surgery &** Allied Field
- **Radiology**
- **Anesthesiology**

Dental Collage

- **BDS**
- **FCPS** Residency Programs
  - **OMFS**
  - **Operative** Dentistry

Collage of Physical Therapy

- **Doctor** of Physical Therapy

Collage of Allied Health Sciences

- **BS-**Medical Lab Technology BS-MLT

Bahria University Lahore Campus (BULC)

Management Sciences

- **BBA** (4 Years.)
- **MBA** (1.5 Years)
- **MBA** (2 Years)
- **MS** (Project Management)
- **MS** (Management Sciences)
- **PhD** (Management Sciences)

Professiaonal Psychology

- **BS** (Psychology)
- **MS** (Clinical Psychology)

Computer Sciences

- **BS** (Computer Science)
- **BS** (Information Technology)
- **MS** (Computer Science)

Rules and Regulations

Academic Rules

Bahria University is committed to fulfilling its core academic mission of educating students. At the same time the University must be prepared to respond to provide a framework that will guide the University in enhancing its ability to fulfill its academic mission in the face of potential threats to academic continuity. It is intended to apply to circumstances and events that are potential threats to the continuity of the academic operations of the University and relates entirely to the principles and processes that should guide the University in this context.

Code of Behavior on Academic Matters

The Academic Council of the University has approved a Code of Behavior on Academic Matters applying to members of the University. The Code of Behavior on Academic Matters addresses the responsibilities of all parties to the integrity of the teaching and learning experience. It concerns the accountability of faculty members and students as they cooperate in all phases of this relationship. Honesty and fairness must inform these activities, the foundation of which is mutual respect for the aims of education and for those ethical principles which characterize the pursuit and transmission of knowledge within the University.

Code of Student Conduct

Students have an obligation to make legal and responsible decisions concerning their conduct. The University has no general responsibility for the moral and social behavior of its students. In the exercise of its disciplinary authority and

responsibility, the University recognizes that students are free to organize their own personal lives, behavior, and associations subject only to the law and to University regulations that are necessary to protect the integrity and safety of University activities, the peaceful and safe enjoyment of University housing by residents and neighbors, or the freedom of members of the University to participate reasonably in the programs of the University and in activities in or on the University's premises.

Dress Code

Male Students

1. Dress/casual trousers
2. Jeans (plain blue) without any images graphics and writeups
3. Dress/casual shirts (jhalf/full sleeves)
4. T-shirts without any images, messages, graphics and writeups.
5. Dress/causal shoes or jogers with socks. (no sandals)
6. Shalwar qameez with shoes (only on friday)
7. Suit/combination
8. Coat/pullover/sweater/jacket in winter.

Female Students

1. Shalwar qameez (no sleveeless)
2. Hijaab, abaya, chaddar
3. Full length jeans/trousers with long shirt/kurta (knee length) (no tights)
4. Light jewellery and light make up
5. Shoes, sandals and jogers
6. Duppatta/scarf compulsory with all dresses.

Note: BUHS students should wear white coat with colour coded (collar/sleeves) as appropriate

BAHRIA BUSINESS SCHOOL
DEPARTMENT OF BUSINESS STUDIES

Programs offered:

- BBA (2 Years)
- BBA (4 Years)
- MBA (1.5 Years)
- MBA (2 Years)
- MBA (Pharmaceutics & Health Management)

BBA (2 Years)

Campus: Karachi

Program Duration: 2 Years (4 Semesters)

Program Timing: Morning

Eligibility Criteria:

Two years Bachelor's degree (e.g. BA, BSc, B Com etc) with a minimum of 50% marks or CGPA 2.5/4.0 in any discipline

BBA (2 Years) Road Map		
Semester-1:		
Course Code	Subject	CH
ENG 105	Functional English	3
ACC 102	Financial Accounting	3
QTM 120	Business Mathematics-II / Numeracy Skills	3
ECO 200	Economics	3
MKT 110	Principles of Marketing	3
MIS 161	IT in Business (word, excel)	3
Semester-2:		
Course Code	Subject	CH
FIN 202	Financial Management	3
ACC 391	Cost and Managerial Accounting	3
MGT311	Career Exploring Management	3
HRM 353	Human Resource Management	3
SCM 360	Supply Chain Management	3
ENG 132	Oral Communication(Public Speaking)	3
Semester-3:		
Course Code	Subject	CH
MIS 460	E Commerce	3
MGT363	Entrepreneurship	3
BCM 204	Business Communication	3
QTM 205	Statistical Inference and Quantitative Research	3
	Specialization-1	3
	Specialization-2	3
Semester-4:		
Course Code	Subject	CH
HSS 301	Social & Psychological Development	3
MGT 463	Corporate Skills	3
MGT 487	Change Management	3
RMT 240	Research Methods and Techniques	3
	Specialization-3	3
	Specialization-4	3
Summer Semester		
Course Code	Subject	CH
SOC 111	Pakistan Studies	2
SOC 110	Islamic Studies / Ethics	2
Note: Internship shall be undertaken after 2nd semester. Bridging		

BBA (4 Years)

Campus: Islamabad, Karachi & Lahore

Program Duration: 4 Years (8 Semesters)

Program Timing: Morning

Eligibility Criteria:

Intermediate or it's equivalent with a minimum of 50% marks (excluding NCC) in any discipline.

Road Map BBA (4 Years)

Semester-1:

Course Code	Subject	CH
ENG 105	Functional English	3
MKT 110	Principles of Marketing	3
QTM 101	Business Mathematics I	3
ECO 110	Microeconomics	3
MGT 111	Principles of Management	3
MIS 161	IT in Business (word, excel)	3

Semester-2:

Course Code	Subject	CH
ENG 120	English Writing Skills	3
QTM 120	Business Mathematics II / Numeracy Skills	3
HSS 202	Introduction to Sociology	3
ECO 121	Macroeconomics	3
QTM 110	Business Statistics	3
ACC 101	Principles of Accounting	3

Semester-3:

Course Code	Subject	CH
ENG 132	Oral Communication(Public Speaking)	3
QTM 205	Statistical Inference and Quantitative Research	3
ACC 102	Financial Accounting	3
ISL 201	Islamic Socio-Economic Studies	3
MKT 231	Marketing Management	3
MGT 242	Organizational Theory and Behavior	3

Semester-4:

Course Code	Subject	CH
MGT 211	Self-Management	3
ACC 203	Cost Accounting	3
BCM 204	Business Communication	3
FIN 201	Fundamentals of Finance	3
MGT 301	Business Law	3
SOC 350	Business Ethics	3

Semester-5:

Course Code	Subject	CH
MGT 311	Career Exploring Management	3
MGT 363	Entrepreneurship	3
HRM 353	Human Resource Management	3
FIN 202	Financial Management	3
ACC 304	Managerial Accounting	3
SCM 360	Supply Chain Management	3

Semester-6:

Course Code	Subject	CH
MIS 460	E-Commerce	3
RMT 621	Operations Research	3
OPM 360	Operation & Production Management	3
HSS 301	Social and Psychological Development	3
ECO 362	Managerial Economics	3
DRI 300	Specialization-I	3

Semester-7:

Course Code	Subject	CH
MIS 461	Advanced Application of IT in Business	3
RMT 240	Research Methods and Techniques	3
MGT 404	Analysis of Pakistan Industries / Business	3
HSS 403	Pakistan and Geo-political Studies	3
	Specialization-II	3

Semester-8:

Course Code	Subject	CH
MGT 463	Corporate Skills	3
MGT 487	Change Management	3
	Specialization-III	3
	Specialization-IV	3

Note: Internship shall be undertaken after 5th semester.
Electives: All electives are of 3 Credit Hours each.

Electives: All electives are of 3 Credit Hours each
Marketing

Course Code	Subject
MKT 610	International Marketing
MKT 655	Services Marketing
MKT 660	Strategic Marketing
MKT 665	Cases in Marketing
MKT 635	New Product Development
MKT 662	Brand Management
MKT 688	Social Media Marketing
MKT 691	Consumer Behavior and Psychology
MKT 620	Marketing Research
MKT 690	Integrated Marketing Communication
MKT 650	Sales Management
MKT 620	Marketing Research
MKT 693	B to B and Personal Selling
MKT 663	Promotion and Advertising Management
MKT 689	Digital Marketing
MKT 691	Retail and Sales Management
MKT 692	Export Marketing
MKT 693	Marketing Issues in Pakistan
MKT 694	Public Rationing and Relationship Marketing
MKT 695	Agriculture Marketing
MKT 603	Product Management
MKT 604	Distribution Management
MKT 605	Digital Analytics
MKT 606	Electronic CRM
MKT 697	Social Marketing
MKT 681	Copy writing Concepts, Protocols and Practices

HRM

Course Code	Subject
HRM 666	Negotiations and Conflict Management
HRM 648	Organizational Development
HRM 676	International Human Resource Management
HRM 677	Seminars In HRM
HRM 689	Recruitment and Selection
HRM 679	Performance Management
HRM 690	HRM and HRD
HRM 691	Career Planning and Strategic Compensation Management

HRM 660	Training and Development
HRM 670	HR Planning
HRM 664	Job Analysis and Design
HRM 649	HR Research Methods
HRM 682	Industrial Relations and Employment Laws
HRM 671	HR Information Systems
HRM 681	Strategic HRM
HRM 665	HR Theory and Practice
HRM 692	Organizational Psychology
MGT 487	Change Management

Finance

Course Code	Subject
FIN 690	Financial Modeling
FIN 691	Strategic Finance
FIN 612	Analysis of Financial Statements
FIN 619	Financial Derivatives
FIN 611	Corporate Finance
FIN 692	Financial Markets and Institutions
FIN 693	Cases in Corporate Finance
FIN 694	Money and Banking
FIN 695	Investment Analysis and Portfolio Management
FIN 635	Management Corporate Turnaround
FIN 696	Financial Reporting
FIN 697	Taxation and Auditing
ACC 622	Accounting Information Systems
FIN 682	Corporate Restructuring
FIN 688	Islamic Finance Theory and Practices
FIN 649	Islamic Banking and Finance
ACC 609	Corporate Law
ACC 608	Advanced Corporate Reporting
FIN 649	Financial Institution Management
FIN 600	Entrepreneurial Finance
ECO 362	Managerial Economics
FIN 461	Fundamentals of Behavioral Finance

Entrepreneurship

Course Code	Subject
ENT 602	Cases in Entrepreneurship
ENT 603	Developing New Products and Services
ENT 620	Entrepreneurial Strategy in Emerging Markets
ENT 606	Innovations and Entrepreneurship
ENT 607	Managing Entrepreneurial Firms
ENT 608	Social Responsibility and Entrepreneurship
ENT 622	Business Growth and Entrepreneurial Finance
ENT 612	Entrepreneurial Marketing
ENT 613	Organizations and Leading Change
ENT 614	Economic of Location and Transportation
ENT 621	Retailing and International Entrepreneurship
ENT 617	Corporate Entrepreneurship
ENT 619	Technology Entrepreneurship

MIS

Course Code	Subject
MIS 655	Database Management System
MIS 620	System Analysis and Design
MIS 679	Enterprise Resource Planning (ERP) Implementation
MIS 672	Web Application Development
MIS 625	Business Process Re-Engineering
MIS 680	Data Communication and Networking
MIS 681	Information Security and System Auditing
MIS 657	Knowledge Management Systems and Technologies
MIS 658	Business Intelligence and Decisions Support
MIS 608	Digital Analytics
MKT 607	Electronic CRM

SCM

Course Code	Subject
SCM 619	Strategic SCM
OPM 611	Operations and Production Management
SCM 650	Total Quality Management
SCM 600	Inventory Management
SCM 614	Strategic Operation Management

Maritime Management (Specialization / Standalone Electives): 3 CH each.

Course Code	Course Title
MTM 101	Introduction to Maritime Industry
MTM 230	Introduction to Maritime Law and International Maritime Convention
MTM 215	Economics of Sea Transport & International Trade
MTM 222	Introduction to Coastal Zone Management
MTM 304	Port Operations and Management
MTM 306	Shipping Operations and Management
MTM 322	Fisheries Resources & Management
MTM 401	Coastal Eco-Tourism Development and Management
MTM 403	Maritime Innovation & Entrepreneurship
MTM 526	Maritime Business: China Pakistan Perspective under CPEC
MTM 521	Maritime Business and HRM
MTM 527	Maritime Management: Concept and Applications
MTM 528	Contemporary Issues of Maritime Management
MTM 529	Maritime Management in Pakistan: Past, Present and Future
HRM 508	Marine Environments and Administration

Foreign Language

Course Code	Course Title
CLE 401	Chinese Language

MBA (1.5 Years)

Campus: Islamabad, Karachi & Lahore

Program Duration: 1.5 Years (3 Semesters)

Program Timing: Evening & Weekend

Eligibility Criteria:

The candidates with BBA (4 Years), ACCA, CA, ACMA, B.Com (4 Years), BS (A & F), MCom and MPA with the minimum of 50% marks or CGPA 2.5/4.0 is eligible for admission.

Road Map MBA (1.5 Years)

MBA 1.5 Years 30 Cr Hrs (33 ACM)

Sr.	Courses	Course Code	Cr Hrs
	Semester -I		
1	Strategic Management	MGT 662	3
2	Corporate Finance	FIN 611	3
3	Corporate Leadership & social Responsibility	MKT 653	3
4	Specialization-I	Majors	3
	Semester-II		
6	Contemporary issues in Business	MKT 600	3
7	Dissertation (Proposal Development)	SDW 696	3
8	Specialization-II	Majors	3
9	Specialization-III	Majors	3
	Semester - III		
10	Thesis Write up & Defense	SDW 698	3
11	Specialization-IV	Majors	3

MBA (2 Years)

Campus: Islamabad, Karachi & Lahore

Program Duration: 2 Years (4 Semesters)

Program Timing: Evening & Weekend

Eligibility Criteria:

16 years education with the minimum of 50% marks or CGPA 2.5/4.0 in any discipline.

Road Map MBA (2 Years)

MBA 2 Years 60 Cr Hrs 33 ACM

Sr.	Courses	Course Code	Credit Hrs
	Semester-I		
1	Marketing Management	MKT 522	3
2	Financial Accounting	ACC 501	3
3	Theories & Practices of Management	MGT 501	3
4	Business Communication	BCM 512	3
5	Stats & Math for Management	QTM 503	3
	Semester-II		
6	Human Resource Management	MGT 541	3
7	Cost & Managerial Accounting	ACC 503	3
8	Economics	ECO 520	3
9	Financial Management	FIN 502	3
10	Methods in Business Research	MGT 620	3
	Semester-III		
11	Strategic Management	MGT 662	3
12	Corporate Finance	FIN 611	3
13	Dissertation (Proposal Development)	SDW 694	3
14	Specialization-I	Majors	3
15	Specialization-II	Majors	3

	Semester -IV		
16	Corporate Leadership & Social Responsibility	MKT 653	3
17	Contemporary Issues in Business	MKT 600	3
18	Thesis Write up & Defense	SDW 696	3
19	Specialization-III	Majors	3
20	Specialization-IV	Majors	3

Electives:

	Marketing		
1	International Marketing	MKT 610	3
2	Services Marketing	MKT 655	3
3	Strategic Marketing	MKT 660	3
4	Cases in Marketing	MKT665	3
5	New Product Development	MKT635	3
6	Brand Management	MKT662	3
7	Social Media Marketing	MKT699	3
8	Consumer Behavior And Psychology	MKT696	3
9	Marketing Research	MKT620	3
10	Integrated Marketing Communication	MKT 698	3
11	Sales Management	MKT 650	3
12	Marketing Research	MKT 620	3
13	B to B and Personal Selling	MKT 672	3
14	Promotion and Advertising Management	MKT 663	3
15	Digital Marketing	MKT 689	3
16	Retail and Sales Management	MKT 691	3
17	Export Marketing	MKT 692	3
18	Marketing Issues in Pakistan	MKT 693	3
19	Public Rationing and Relationship Marketing	MKT 694	3
20	Agriculture Marketing	MKT695	3
21	Digital Analytics	MKT 605	3
22	Electronic CRM	MKT607	3
	Human Resource Management		
21	Negotiations And Conflict Management	HRM 666	3
22	Organizational Development	HRM 648	3
23	International Human Resource Management	HRM 676	3
24	Seminars in HRM	HRM 677	3
25	Recruitment and Selection	HRM 689	3

26	Performance Management	HRM 679	3
27	HRM & HRD	HRM 690	3
28	Career Planning And Strategic Compensation Management	HRM 691	3
29	Training And Development	HRM 660	3
30	HR Planning	HRM 670	3
31	Job Analysis and Design	HRM 664	3
32	HR Research Methods	HRM 649	3
33	Industrial Relations and Employment Laws	HRM 682	3
34	HR Information Systems	HRM 671	3
35	Strategic HRM	HRM 681	3
36	HR Theory and Practice	HRM 665	3
37	Organizational Psychology	HRM 692	3

Finance			
38	Financial Modeling	FIN 690	3
39	Strategic Finance	FIN 698	3
40	Analysis of Financial Statements	FIN 612	3
41	Financial Derivatives	FIN 619	3
42	Corporate Finance	FIN 611	3
43	Financial Markets and Institutions	FIN 692	3
44	Cases in Corporate Finance	FIN 693	3
45	Money and Banking	FIN 694	3
46	Investment Analysis and Portfolio Management	FIN 695	3
47	Management Corporate Turnaround	FIN 635	3
48	Financial Reporting	FIN 696	3
49	Taxation and Auditing	FIN 697	3
50	Accounting Information Systems	ACC 622	3
51	Corporate Restructuring	FIN 682	3
52	Islamic Finance Theory and Practices	FIN 688	3
53	Islamic Banking and Finance	FIN 662	3
54	Corporate Law	ACC-609	3
55	Advanced Corporate Reporting	ACC-608	3
56	Financial Institution Management	FIN 649	3
57	Commodities & Derivatives Markets	FIN 625	3
58	Debt Capital Markets	FIN 605	3

59	Equity Capital Markets	FIN 604	3
60	Behavioral Finance & Wealth Management	FIN 665	3
61	Entrepreneurian Finance	FIN 603	3

Entrepreneurship			
57	Cases in Entrepreneurship	ENT 602	3
58	Developing New Products and Services	ENT 603	3
59	Entrepreneurial Strategy in Emerging Markets	ENT 620	3
60	Innovations and Entrepreneurship	ENT 606	3
61	Managing Entrepreneurial Firms	ENT 607	3
62	Social Responsibility and Entrepreneurship	ENT 608	3
63	Business Growth and Entrepreneurial Finance	ENT 621	3
64	Entrepreneurial Marketing	ENT 612	3
65	Organizations and Leading Change	ENT 613	3
66	Economic of Location and Transportation	ENT 614	3
67	Retailing and International Entrepreneurship	ENT 622	3
68	Corporate Entrepreneurship	ENT 617	3
69	Technology Entrepreneurship	ENT 619	3

MIS			
70	Database Management System	IT 655	3
71	System Analysis and Design	IT 620	3
72	Enterprise Resource Planning (ERP) IMP.	IT679	3
73	Web Application Development	IT672	3
74	Business Process Re-Engineering	IT 625	3
75	Data Communication and Networking	IT 680	3
76	Information Security and System Auditing	IT 681	3
77	Knowledge Management Systems and Tech.	IT 657	3
78	Business Intelligence and Decisions Support	IT 658	3

Supply Chain Management			
79	Strategic SCM	SCM 619	3
80	Operations and Production Management	OPM 611	3
81	Total Quality Management	SCM 650	3
82	Inventory Management	SCM 600	3
83	Strategic Operation Management	SCM 614	3
84	Sourcing and Logistics Management	SCM 615	3
85	Supply Chain Modeling	SCM 616	3
86	Demand Forecasting	SCM 617	3

87	Pricing in SCM	SCM 618	3
88	Purchasing	SCM 520	3
89	Strategic Procurement in Supply Chain	SCM-630	3
90	Operational Planning in Supply Chain	SCM-631	3
91	Execution and Control of Operations in SCM	SCM-632	3
92	Master Planning of Resources in SCM	SCM-633	3
93	Detailed Scheduling and Planning in SCM	SCM-634	3
94	Strategic Management of Resources in SCM	SCM-635	3
95	Green Supply Chain Management – GSCM	SCM 636	3
96	Shipping in SCM	SCM-637	3
97	Operational Planning in Supply Chain	SCM-639	3
98	Supply Chain Strategy, Design and Compliance	SCM-638	3
99	Supply Chain Implementation and Operations	SCM-640	3
100	Fundamentals of Supply Chain Management	SCM-701	3

MBA (Pharmaceutical and Health Management)

Campus: Karachi

Program Duration: 2 Years (9 Semesters)

Program Timing: Morning

Eligibility Criteria:

MBA (2 Years) Sixteen Years Of Non-Business Education MS(F) & MS (PM) Additionally, applicants must provide HEC verification of all academic certificates / degrees.

Road Map MBA (1.5 Years)

Semester 1

S/No	Codes	Course	Level	CH	Pre-requisite
1	HRP 701	Contemporary HRM and Practices	Core	3	
2	HRP 702	Personnel Selection and Advanced Counseling Skills	Core	3	
3	HRP 703	Organizational Psychology and Psychometrics	Core	3	

Semester 2

S/No	Codes	Course	Level	CH	Pre-requisite
1	HRP 704	Applied Attitude and Behavioral Analysis	Core	3	
2	HRP 705	Contemporary Issues in Business and Industry	Core	3	
3	HRP XXX	Elective-I	Specialization	3	

S/No	Codes	Course	Level	CH	Pre-requisite
1	HRP 708	Advance Research Methodology and Proposal Development	Core	3	
2	HRP XXX	Elective-II	Specialization	3	
3	HRP XXX	Elective-III	Specialization	3	

Semester 4:

S/No	Codes	Course	Level	CH	Pre-requisite
1	HRP 719	Internship	Core	3	
2	HRP 700	Research Thesis	Core	6	

List of Electives

S/No	Codes	Title of the Course	CH	Remarks
1.	HRP 709	Leadership Issues in Organizations: Concepts and Applications	3	
2.	HRP 710	Theories of Learning and Conditioning	3	
3.	HRP 711	Communication Strategies of Scholars	3	
4.	HRP 712	Seminars in Organizational Behaviors	3	
5.	HRP 713	Culture and Persuasion	3	
6.	HRP 714	Social and Self-Development	3	
7.	HRP 715	Abnormal Psychology	3	
8.	HRP 716	Industrial Relations and Labor Laws	3	
9.	HRP 717	Seminars in Organizational Development	3	
10.	HRP 718	Seminars in Human Resource Development	3	

Maritime Management (Specialization / Standalone Electives): 3 CH each.

Course Code	Course Title
MTM 101	Introduction to Maritime Industry
MTM 230	Introduction to Maritime Law and International Maritime Convention
MTM 215	Economics of Sea Transport & International Trade
MTM 222	Introduction to Coastal Zone Management
MTM 304	Port Operations and Management
MTM 306	Shipping Operations and Management
MTM 322	Fisheries Resources & Management
MTM 401	Coastal Eco-Tourism Development and Management
MTM 403	Maritime Innovation & Entrepreneurship
MTM 526	Maritime Business: China Pakistan Perspective under CPEC
MTM 521	Maritime Business and HRM
MTM 527	Maritime Management: Concept and Applications
MTM 528	Contemporary Issues of Maritime Management
MTM 529	Maritime Management in Pakistan: Past, Present and Future
HRM 508	Marine Environments and Administration

Foreign Language

CLE 401	Chinese Language

Topics for Research in Maritime Domain for MBA/ MS/MPhil/PhD

1. Shipping Industry of Pakistan: Scope and Dimensions for Development in Global and Regional Perspective
2. Maritime Education and Research: Employment Scope and Development Avenues in Pakistani Perspective under BRI and CPEC
3. Employment and Entrepreneurship Opportunities: Maritime Education and Skill needs of Pakistan in CPEC Scenario of 2025 and Beyond
4. Management of Warehouses: New Trends under Technology Dominance, Pakistan a Case in Point
5. Marine Oil Spill: Past, Present and Future Status of Pakistani Coastal Protection and Disaster Management
6. Port Management under Technology Dominance: Karachi Port Trust and its Significance in
7. Pakistan's Economy
8. Port Management under Technology Dominance: The Port Muhammad Bin Qasim and its
9. Significance in Pakistan's Economy
10. Effective Cargo Management: Managing Shipping Containers at Pakistani Ports, a Case in Point
11. State of Maritime Container Terminals in Pakistan: Significance of Automated Systems
12. Shipping Industry in Pakistan: Current Status and its Future in view of CPEC Scenario of 2025-2030
13. Issues of Port Safety in Pakistan: Management Risks and Solutions as Per International Standards
14. Boat Construction Dynamics in Pakistan: Its significance and Future in View of

DEPARTMENT OF MANAGEMENT STUDIES

Programs offered:

- BS Accounting & Finance (4 Years)
- BS Economics (4 Years)
- BS Economics & Finance (4 Years)
- BS SCM (4 Years)
- M.Phil (MS)
- MS Economics
- MS (FINANCE)
- MS (MS)
- MS (PM)
- MS (Supply Chain Management)
- MS (HRM & Organizational Psychology)
- PhD (Management Sciences)
- PhD (Economics)

BS (Accounting & Finance 4 Years)

Campus: Islamabad & Karachi

Program Duration: 4 Years (8 Semesters)

Program Timing: Morning

Eligibility Criteria:

Intermediate or it's equivalent with a minimum of 50% marks in any discipline.

Road Map A&F (4 Years)

*Choose Elective Courses of Finance from any list of Finance Electives of BBA, MBA and BS (A&F)

First Semester

Course Code	Subject	CH
ENG 103	English-I	3
QTM 101	Business Mathematics-I	3
ECO 110	Microeconomics	3
MKT 110	Principles of Marketing	3
ACC 101	Principles of Accounting	3
MGT 111	Principles of Management	3

Second Semester

Course Code	Subject	CH
ISL 101	Islamic Studies	3
ENG 104	English-II	3
QTM 105	Introduction to Statistics	3
ECO 121	Macroeconomics	3
ACC 102	Financial Accounting	3
QTM 102	Business Mathematics – II	3

Third Semester

Course Code	Subject	CH
PAK 101	Pakistan Studies	3
MIS 210	Introduction to Information Technology	3
ACC 203	Cost Accounting	3
FIN 201	Introduction to Finance	3
BCM 243	Business Communication	3
MGT 242	Organization Behavior	3

Fourth Semester

Course Code	Subject	CH
MGT 301	Business Law	3
QTM 204	Statistical Inference	3
HRM 353	Human Resource Management	3
ACC 304	Managerial Accounting	3
ACC 220	Principles of Taxation	3
FIN 202	Financial Management	3

Fifth Semester

Course Code	Subject	CH
ACC 400	Advanced Managerial Accounting	3
ACC 305	Financial Reporting – I	3
ACC 306	Principles of Auditing	3
BCM 302	Presentation and Communication Skills	3
FIN 306	Financial Modeling	3
	HSS-I	3

Sixth Semester

Course Code	Subject	CH
FIN 320	Financial Institution Management	3
FIN 308	Corporate Finance	3
MGT 508	Corporate Law	3
ACC 320	Financial Reporting – II	3
	HSS-II	3
	HSS-III	3

Seventh Semester

Course Code	Subject	CH
ACC 410	Advanced Taxation	3
ACC 412	Advanced Auditing	3
ECO 415	Econometrics	3
	Elective-1	3
	Elective-2	3

Eighth Semester

Course Code	Subject	CH
PRO 450	Project	3
	Elective – 3	3
	Elective – 4	3
	Elective – 5	3
	Elective – 6	3

Note: Internship of 6 weeks after 4th Semester.

Electives: All electives are of 3 Credit Hours each

List of Accounting Electives

Course Code	Subject
ACC 607	Advance Financial Reporting
ACC 623	Corporate Governance
ACC 624	Accounting Information System With SAP
ACC 625	Mercantile Law
ACC 626	Advance IT
ACC 627	Strategic Management Accounting and Control
ACC 628	Tax Management and Optimization
ACC 629	Actuarial Accounting

ACC 631	Merger and Acquisition Accounting
FIN 621	Budgeting
List of Finance Electives	
FIN 646	Financial Econometrics
FIN 647	Financial Restructuring
FIN 619	Financial Derivatives
FIN 648	International Finance
FIN 649	Islamic Banking and Finance
FIN 650	Analysis of Financial Time Series
FIN 651	Financial Information System
FIN 613	Portfolio Analysis and Management
FIN 618	Treasury and Funds Management
FIN 603	Entrepreneurial Finance
FIN 685	Business Intelligence
FIN 684	Financial Engineering
FIN 659	Advance Financial Management
List of Banking Electives	
FIN 660	Branch and Branchless Banking
FIN 652	Lending-Products, operation and risk management
FIN 653	Finance of International Trade
FIN 654	Marketing of Financial Services
FIN 655	Information Technology in Financial Services
FIN 617	Investment Banking
FIN 615	Commercial Banking

BS-Economics (4 Years)

Campus: Islamabad

Program Duration: 4 Years (8 Semesters)

Program Timing: Morning

Eligibility Criteria:

HSSC – II minimum or its equivalent 50% marks A Level.

Available Specialization:

1. International Economics
2. Sustainable Development

Road Map Economics (4 Years)

Semester – 1

S.No	Codes	Course	Level	CH
1	ENG 105	Functional English	Core	3
2	QTM 101	Business Math	Core	3
3	ECO 110	Microeconomics- I	Core	3
4	MIS 161	IT Skills (Word, Excel)	Core	3
5	HSS 108	Introduction to Sociology	Core	3
6	MGT 111	Principles of Management	Core	3

Semester – 2

S.No	Codes	Course	Level	CH
1	ISL 101	Islamic Studies	Core	3
2	QTM 105	Introduction to Statistics	Core	3
3	QTM 120	Numeracy Skills	Core	3
4	ECO 121	Macroeconomics-I	Core	3
5	ECO 111	Microeconomics-II	Core	3
6	HSS 107	Introduction to Psychology	Core	3

Semester – 3

S.No	Codes	Course	Level	CH
1	SOC 240	Pakistan Studies	Core	3
2	ECO 201	Financial Institutions and Markets	Core	3
3	ECO 122	Macroeconomics-II	Core	3
4	ECO 202	Issues in Pakistan's Economy	Core	3
5	ENG 132	Oral Communication (Public Speaking Skills)	Core	3
6	QTM 232	Statistical Inference	Core	3

Semester – 4

S.No	Codes	Course	Level	CH
1	ECO 301	Fundamentals of Econometrics	Core	3
2	ACC 102	Introduction to Financial Accounting	Core	3
3	ECO 304	Business Taxation and Public Finance	Core	3
4	RMT 240	Research Methods & Techniques	Core	3
5	ECO 340	Development Economics	Core	3
6	ENG 243	Business Communication Skills	Core	3

Semester – 5

S.No	Codes	Course	Level	CH
1	ECO 306	International Economics & Finance	Core	3
2	ECO 307	Money and Banking	Core	3
3	ECO 308	Natural Resource Economics	Core	3
4	MGT 311	Career Exploring	Core	3
5	ECO 309	Monetary Theory & Policy	Core	3

Semester – 6

S.No	Codes	Course	Level	CH
1	ECO 362	Managerial Economics	Core	3
2	HSS 301	Social and Psychological Development	Core	3
3	ECO 401	Financial Econometrics	Core	3
4	ECO 501	Banking and Taxation	Core	3
5	ECO 404	Money and Capital Markets	Core	3

Semester – 7

S.No	Codes	Course	Level	CH
1	ECO 403	Trade Policy	Core	3
2	MGT 211	Self-Management	Core	3
3	Elective-1		Elective	3
4	Elective-2		Elective	3
5	Elective-3		Elective	3
6	Elective-4		Elective	3

Semester – 8

S.No	Codes	Course	Level	CH
1	MGT 463	Corporate Skills	Core	3
2	Elective-5	Elective		3
3	Elective-6	Elective		3
4	SDW 699	Project / Thesis	Core	6

List of Electives
Electives International Economics

Course Code	Course Title
ECO 536	Globalization and International Trade
ECO 518	International Business Law
ECO 537	International Financial Markets
ECO 538	International Logistics and Transportation Management
ECO 539	Foreign Trade and FDI Policies
ECO 522	International Corporate Law
ECO 523	Global Value chains (GVCs) for Trade
ECO 524	World Trade Organization and Regional Trade Facilitation
ECO 525	Asian transport corridors and Trade
ECO 502	Industrial Economics
ECO 503	Budgeting and Financial Planning
ECO 504	Advanced Topics in Microeconomics
ECO 505	Advanced Topics in Macroeconomics
ECO 507	International Economics
ECO 508	Labor Economics
ECO 509	Investment Banking & Security Analysis
ECO 510	Islamic Economics
ECO 513	Economics of Regulation and Competition Policy

Electives Sustainable Development

Course Code	Course Title
ECO 526	Sustainable Development and Economic Policy
ECO 527	Urbanization and Development
ECO 528	Governance and Global Developmental Issues
ECO 529	Economics of Climate Change
ECO 530	Issues in Environmental Economics (Energy, water and Forest)
ECO 531	Sustainability: Purpose and Challenges
ECO 532	Food Sustainability
ECO 533	Sustainable Energy
ECO 534	Sustainable Consumption and Production
ECO 535	Sustainable Development Goals
ECO 506	Poverty & Income Distribution
ECO 511	Urban Economics
ECO 512	General Equilibrium and Welfare Economics
ECO 514	International Peace and Security
ECO 515	Union and Labor Laws
ECO 516	Agriculture Economics and Food Security

BS (Economics & Finance)

Campus: Karachi

Program Duration: 4 Years (8 Semesters)

Program Timing: Morning

Eligibility Criteria:

Intermediate or it's equivalent with a minimum of 50% marks in any discipline.

Road Map Economics & Finance

Semester-1

S/No	Pre-requisite course code	Course Code	Course Title	Credit Hours
1		ENG 105	Functional English	3
2		QTM 101	Business Math (for Economists)	3
3		ECO 110	Microeconomics- I	3
4		MIS 161	IT Skills (Word, Excel)	3
5		HSS 108	Introduction to Sociology	3
6		MGT 111	Principles of Management	3

Semester-2

S/No	Pre-requisite course code	Course Code	Course Title	Credit Hours
1		ISL 101	Islamic Studies	3
2		QTM 105	Introduction to Statistics	3
3		QTM 120	Numeracy Skills	3
4		ECO 121	Macroeconomics-I	3
5	ECO 110	ECO 111	Microeconomics-II	3
6		FIN107	Financial Accounting	3

Semester-3

S/No	Pre-requisite course code	Course Code	Course Title	Credit Hours
1		PAK 101	Pakistan Studies	3
2		ECO 203	Digitization of Economy and Artificial Intelligence	3
3	ECO 121	ECO 122	Macroeconomics-II	3
4		ECO 202	Issues in Pakistan's Economy	3
5	ENG 105	ENG 105	Oral Communication (Public Speaking Skills)	3
6	QTM 101	QTM 204	Statistical Inference	3

Semester-4

S/No	Pre-requisite course code	Course Code	Course Title	Credit Hours
1		FIN 315	Fundamentals of Econometrics	**3**
2		ECO 311	Economics of Entrepreneurs	3
3		ECO 304	Business Taxation and Public Finance	3
4		RMT 240	Research Methods & Techniques	3
5		FIN 201	Fundamentals of Finance	3
6		BCM 304	Business Communication Skills	3

Semester-5

S/No	Pre-requisite course code	Course Code	Course Title	Credit Hours
1		ECO 384	Financial Management	3
2	FIN 315	FIN 316	Financial Econometrics and Modeling	3

3		ECO 362	Managerial Economics	3
4		MGT 311	Career Exploring Management	3
5		ECO 317	Monetary Theory & Policy	3

Semester-6

S/No	Pre-requisite course code	Course Code	Course Title	Credit Hours
1		SCM 361	Economy and Green SCM	3
2		HSS 301	Social and Psychological Development	3
3		FIN 321	Finance of Emerging Markets	3
4		FIN 322	Money and Banking	3
5		FIN 323	Financial Markets	3

Semester-7

S/No	Pre-requisite course code	Course Code	Course Title	Credit Hours
1	RMT 240	MGT 401	Project Management and Evaluation	3
2		MGT 402	Self-Management	3
3			Elective-1	3
4			Elective-2	3
5			Elective-3	3
6			Elective-4	3

Semester-8

S/No	Pre-requisite course code	Course Code	Course Title	Credit Hours
1		MGT 403	Corporate Skills	3
2			Elective-5	3
3			Elective-6	3
4	RMT 240 MGT 401	SDW 404	Project / Thesis	3

List of Elective Courses

S. No	Course Code	Previous Courses	CH
1.	ECO 502	Industrial Economics	3
2.	ECO 503	Budgeting and Financial Planning	3
3.	ECO 504	Advanced Topics in Microeconomics	3
4.	ECO 505	Advanced Topics in Macroeconomics	3
5.	DST 506	Poverty & Income Distribution	3
6.	HSS 507	International Economics	3
7.	ECO 508	Labor Economics	3
8.	FIN 509	Investment Banking & Security Analysis	3
9.	ECO 510	Islamic Economics	3
10.	ECO 511	Urban Economics	3
11.	ECO 512	Regulation and Competition Policy	3
12.	HSS 514	Union and Labor Laws	3
13.	ECO 516	Agriculture Economics and Food Security	3
14.	ECO 517	Economic Perspective and Public Policy	3
15.	MGT 512	Corporate Law and Governance	3
16.	ECO 518	Financial Risk Management	3
17.	FIN 516	Introduction to Microfinance	3
18.	FIN 521	Introduction to Financial Inclusions	3
19.	FIN 654	Marketing Financial Services	3
20.	FIN 611	Corporate Finance	3
21.	FIN 612	Analysis of Financial Statement	3
22.	FIN 615	Financial derivative	3
23.	FIN 613	Portfolio Analysis and Management	3
24.	FIN 690	Financial modeling	3

Maritime Management (Specialization / Standalone Electives)

S/No	Course Code	Course Title	Credit Hours
1.	MTM 101	Introduction to Maritime Industry	3
2.	MTM 230	Introduction to Maritime Law and International Maritime Convention	3
3.	MTM 215	Economics of Sea Transport & International Trade	3
4.	MTM 222	Introduction to Coastal Zone Management	3
5.	MTM 304	Port Operations and Management	3
6.	MTM 306	Shipping Operations and Management	3
7.	MTM 322	Fisheries Resources & Management	3

8.	MTM 401	Coastal Eco-Tourism Development and Management	3
9.	MTM 403	Maritime Innovation & Entrepreneurship	3
10.	MTM 526	Maritime Business: China Pakistan Perspective under CPEC	3
11.	MTM 521	Maritime Business and HRM	3
12.	MTM 527	Maritime Management: Concept and Applications	3
13.	MTM 528	Contemporary Issues of Maritime Management	3
14.	MTM 529	Maritime Management in Pakistan: Past, Present and Future	3

BS Supply Chain Management (4 Years)

Campus: Islamabad, Karachi

Program Timing: Morning

Program Duration: 4 Years (8 Semesters)

Eligibility Criteria: Intermediate or it's equivalent with a minimum of 50% marks (excluding NCC) in any discipline.

Road Map of BS (Supply Chain Management)

Semester-1

S/No	Codes	Course	Level	CH	Pre-requisite
1	ENG-105	Functional English	Core	3	
2	QTM 101	Business Math – I	Core	3	
3	ECO 110	Micro-Economics	Core	3	
4	PAK-101	Pakistan Studies	Core	3	
5	ISL-101/ SOC-360	Islamic Studies/Ethics	Core	3	
6	MGT-111	Principles of Management	Core	3	

Semester-2

S/No	Codes	Course	Level	CH
1	ENG 132	Oral Communication & Public Speaking Skills	Core	3
2	MIS 163	IT in SCM	Core	3
3	HSS 202	Introduction to Sociology	Core	3
4	ACC 102	Financial Accounting	Core	3
5	ECO 121	Macro-Economics	Core	3
6	SCM 101	Introduction to SCM	Core	3

Semester-3

S/No	Codes	Course	Level	CH
1	BCM 204	Business Communication	Core	3
2	QTM 110	Business Statistics	Core	3
3	ACC 304	Managerial Accounting	Core	3
4	MKT 110	Principles of Marketing	Core	3
5	QTM 120	Business Math – II / Numeracy Skills	Core	3
6	SCM 201	Introduction to Procurement Management	Core	3

Semester-4

S/No	Codes	Course	Level	CH
1	MGT 211	Self-Management	Core	3
2	HRM 353	Human Resource Management	Core	3
3	FIN 220	Finance of SC Managers	Core	3
4	SCM 221	Logistics and Distribution	Core	3

5	OPM 360	Operation and Production Management	Core	3
6	SCM 301	Inventory and Warehouse Management	Core	3

Semester-5

S/No	Codes	Course	Level	CH
1	MGT 311	Career Exploring Management	Core	3
2	MGT 435	Project Management	Core	3
3	MIS 310	SC Analytics and Information System	Core	3
4	MGT 312	Quality Management and Lean Thinking	Core	3
5	QTM 205	Statistical Inference and Quantitative Research	Core	3
6	SCM 302	Supply Network Planning and Design	Core	3

Semester-6

S/No	Codes	Course	Level	CH
1	HSS 301	Social and Psychological Development	Core	3
2	SCM 320	Import Export Management	Core	3
3	SCM 321	Multimodal Transport Management	Core	3
4	SCM 402	Legal Aspects of Supply Chains	Core	3
5	RMT 240	Research Methods & Techniques	Core	3
6	SCM 323	Innovations in SC with Ecommerce	Core	3

Semester-7

S/No	Codes	Course	Level	CH
1	SCM 401	Supply Chain Risk Management	Core	3
2	RMT 360	Operations Research	Core	3
3	SCM 421	Globalization and Outsourcing Strategies	Core	3
4		Elective-I		
5		Elective-II		

Semester-8

S/No	Codes	Course	Level	CH
1	MGT 463	Corporate Skills	Core	3
2		Elective-III (Capstone Project)	Elective	3
3		Elective-IV	Elective	3
4	CLE 401/ ARA 401	Foriegn Language (Chinese/Arabic)	Core	3

Note: In semester 6 under SCM 402, PNSL undergraduate to study PRO 416 (Naval Law & General Regulations).

List of Electives

Planning and Procurement

S/No	Codes	Title of the Course	CH
1.	SCM 654	Management and Leadership	3
2.	SCM 649	Contemporary Issues in Supply Chain Management	3
3.	SCM 655	Customer and Supplier Relationship Management	3
4.	SCM 648	Entrepreneurship in Supply Chain Management	3
5.	SCM 647	ERP and SCM Systems	3
6.	SCM 633	Master planning of Resources in SCM	3
7.	SCM 617	Demand Forecasting	3
8.	SCM 646	Business Process Reengineering	3
9.	SCM 645	Contract Management	3
10	SCM 636	Green Supply Chain Management	3

Warehousing and Logistics

S/No	Codes	Title of the Course	CH
1.	SCM 652	Shipping, Freights and Port Operations	3
2.	SCM 654	Management and Leadership	3
3.	SCM 651	Humanitarian Logistics	3
4.	SCM 649	Contemporary Issues in Supply Chain Management	3
5.	SCM 648	Entrepreneurship in Supply Chain Management	3
6.	SCM 647	ERP and SCM Systems	3
7.	SCM 646	Business Process Reengineering	3

8.	SCM 653	Health Safety Environment (HSE) in Warehouse	3
9	SCM 324	Supply Chain Performance Measurement	3

Maritime Management (Specialization / Standalone Electives): 3 CH each.

S/No	Course Code	Course Title
1	MTM 101	Introduction to Maritime Industry
2	MTM 230	Introduction to Maritime Law and International Maritime Convention
3	MTM 215	Economics of Sea Transport & International Trade
4	MTM 222	Introduction to Coastal Zone Management
5	MTM 304	Port Operations and Management
6	MTM 306	Shipping Operations and Management
7	MTM 322	Fisheries Resources & Management
8	MTM 401	Coastal Eco-Tourism Development and Management
9	MTM 403	Maritime Innovation & Entrepreneurship
10	MTM 526	Maritime Business: China Pakistan Perspective under CPEC
11	MTM 521	Maritime Business and HRM
12	MTM 527	Maritime Management: Concept and Applications
13	MTM 528	Contemporary Issues of Maritime Management
14	MTM 529	Maritime Management in Pakistan: Past, Present and Future
15	HRM 508	Marine Environments and Administration

Foreign Language

CLE 401	Chinese Language

MPhil (Management Sciences)

Campus: Islamabad & Karachi

Program Duration: 2 Years (4 Semesters)

Program Timing: Evening

Eligibility Criteria:

16 Years education, Masters/ Bachelor's Degree with a minimum 50% marks or CGPA 2.5/4.0 in relevant discipline.

Additionally, applicants much provide HEC verification of all academic certificates/ degrees.

Road Map MPhil (Management Sciences)

Semester One

S/No	Codes	Course	Level	CH	Pre-requisite
1	MGT 701	Philosophies of Administrative Sciences	Core	3	
2	MGT 702	Advanced Research Methodology and Proposal Development	Core	3	
3	MGT 703	Seminars in Organizational Analysis	Core	3	

Semester Two

S/No	Codes	Course	Level	CH	Pre-requisite
1	MGT 704	Applied Statistical Research Methods	Core	3	
2	MGT XXX	Elective-I	Specialization	3	
3	MGT XXX	Elective-II	Specialization	3	

Semester Three

S/No	Codes	Course	Level	CH	Pre-requisite
1	THS 701	Thesis	Specialization	6	
2	MGT XXX	Elective-III	Specialization	6	

2	MGT XXX	Elective-IV	Specialization		

Semester 4

S/No	Codes	Course	Level	CH	Pre-requisite
1	THS 701	Thesis	Core	6	

List of Electives

S/No	Codes	Title of the Course	CH
1.	MGT 835	Special Topics in Organizational behavior and Management	3
2.	MGT 807	Leadership Issues in Organizations: Concepts and Applications	3
3.	MGT 808	Advanced Marketing Management Concept and Application	3
4.	MGT 809	Advanced Financial and Management Accounting: Concept and Application	3
5.	MGT 810	Business Decision Models: Concepts and Applications	3
6.	MGT 811	Change Management: Concepts and Applications	3
7.	MGT 812	Buyer Behavior: Concept sand Applications	3
8.	MGT 813	Contemporary Issues in international Marketing: Concepts and Applications	3
9.	MGT 814	Corporate Governess and Sustainability	3
10.	MGT 815	Financial Institutions Management	3
11.	MGT 816	International Strategic Management	3
12.	MGT 817	Human Resource Management: Concepts and Applications	3
13.	MGT 818	Managing International Aid and Development	3
14.	MGT 819	Service Operation Management: Concept and Application	3
15.	MGT 823	Global Governance	3
16.	MGT 824	Globalization	3
17.	MGT 825	International Business & Economics v	3
18.	MGT 826	Global Security	3
19.	MGT 827	Politics of Development & Business Process	3
20.	MSF 704	Financial Econometrics	3
21.	MGT 829	System Thinking in Management	3

Maritime Management (Specialization / Standalone Electives): 3 CH each.

Course Code	Course Title
MTM 101	Introduction to Maritime Industry
MTM 230	Introduction to Maritime Law and International Maritime Convention
MTM 215	Economics of Sea Transport & International Trade
MTM 222	Introduction to Coastal Zone Management
MTM 304	Port Operations and Management
MTM 306	Shipping Operations and Management
MTM 322	Fisheries Resources & Management
MTM 401	Coastal Eco-Tourism Development and Management
MTM 403	Maritime Innovation & Entrepreneurship
MTM 526	Maritime Business: China Pakistan Perspective under CPEC
MTM 521	Maritime Business and HRM
MTM 527	Maritime Management: Concept and Applications
MTM 528	Contemporary Issues of Maritime Management
MTM 529	Maritime Management in Pakistan: Past, Present and Future
HRM 508	Marine Environments and Administration
Foreign Language	
CLE 401	Chinese Language

Topics for Research in Maritime Domain for MBA/ MS/MPhil/PhD

1. Shipping Industry of Pakistan: Scope and Dimensions for Development in Global and Regional Perspective
2. Maritime Education and Research: Employment Scope and Development Avenues in Pakistani Perspective under BRI and CPEC
3. Employment and Entrepreneurship Opportunities: Maritime Education and Skill needs of Pakistan in CPEC Scenario of 2025 and Beyond
4. Management of Warehouses: New Trends under Technology Dominance, Pakistan a Case in Point
5. Marine Oil Spill: Past, Present and Future Status of Pakistani Coastal Protection and Disaster Management
6. Port Management under Technology Dominance: Karachi Port Trust and its Significance in
7. Pakistan's Economy
8. Port Management under Technology Dominance: The Port Muhammad Bin Qasim and its
9. Significance in Pakistan's Economy
10. Effective Cargo Management: Managing Shipping Containers at Pakistani Ports, a Case in Point
11. State of Maritime Container Terminals in Pakistan: Significance of Automated Systems
12. Shipping Industry in Pakistan: Current Status and its Future in view of CPEC Scenario of 2025-2030
13. Issues of Port Safety in Pakistan: Management Risks and Solutions as Per International Standards
14. Boat Construction Dynamics in Pakistan: Its significance and Future in View of CPEC Scenario of 2025-2030.
15. Gawadar Fish Harbor: Its Significance, Development Prospects and Future under CPEC Expansions
16. Maritime Security: Current Status and its Future In view of BRI and CPEC Scenario of 2030.
17. Pakistan and China Collaborations for Enhancing Growth of Maritime industry in Pakistan.
18. Entrepreneurship, Innovation and Finance for Sustainable Development and Exploration of Maritime resources.
19. Challenges Expected to be Faced By Developing Countries After the Decade of the Ocean (2021-2030)
20. Scope and Dimensions of Shipping Industry of Pakistan for Development in Regional and Global Perspective.
21. Concept of Smart Port and Cargo Management Practices: Recommendations for Pakistan under CPEC Perspective
22. Prospects of Economic Growth and Social Development through Maritime Education in Pakistan
23. Smart Shipping, Ports, Transportation and Global Connectivity through BRI and CPEC.
24. Role of Gwadar Port in Employment Opportunities, Social Development and Poverty Alleviation.
25. Concept of Blue Economy and Opportunities of Growth and Development in Pakistani Perspective under BRI and CPEC

26. Sustainable Energy, Mineral Resources and Development of Innovative Industries in Maritime Sector of Pakistan.
27. Maritime Safety, Security and Regulatory Policies of Pakistan and Implications under CPEC Development.
28. Measuring Impact of Green Supply Chain Management on Corporate Performance of Manufacturing Industries in Gwadar Special Economic Zone (Predicting Future through Mixed Method Approach).
29. Forecasting Impact of Green Supply Chain Practices at Gwadar Industrial Zone on Future of Organizational Performances and Businesses.
30. Gwadar Industrial Zone in 2040: Supply Chain Management Impacting Financial Outlays of Organizations and their Sustainability.
31. Gwadar Industrial Zone in 2040: Comparative Study of Conventional and Green Supply Chain Practices Impacting Organizational Sustainability.
32. Supply Chain Management at Transit Points of Gwadar Industrial Zone: Measuring Impact of Technology on Sustainability of Organizations.

MS Economics (2 Years)

Campus: Islamabad

Program Duration: 2 Years (4 Semesters)

Program Timing: Weekend

Eligibility Criteria:

1. Applicant must have 16 years of Economics / Finance / Banking /Accounting / Statistics /relevant education/ equivalent degree with 2.5/4 CGPA or 50% marks

2. Applicant must have clear GAT/GRE or Bahria University admission test. Students with non-business background will take deficiency courses as per HEC rules.

3. HEC`s attestation on the candidate`s local degree (on the back of the original degree.

4. HEC`s equivalency certificate for the candidate`s foreign degree.Road Map MPhil (Management Sciences)

Road Map Economics (2 Years)

	First Semester				
S.No.	Course Code	Proposed Course Code	Course Titles	Level	Credit Hours
1	MSE 701	MSE 601	Advance Micro-Economics	Core	3
2	MSE 705	MSE 505	Developmental Economics: theory and Policy	Core	3
3	MSE 704	MSE 504	Mathematical Methods for Economists	Core	3
4			Elective 1		3

	Second Semester & Electives (12 Cr)				
S.No.	Course Code	Proposed Course Code	Course Titles	Level	Credit Hours
1	MSE 702	MSE 602	Advance Macro-Economics	Core	3
2	MSE 703	MSE 603	Applied Econometrics	Core	3
3			Elective 2		3
4			Elective 3		3

	Third Semester (3 Cr)				
S.No.	Course Code		Course Titles	Level	Credit Hours
1	THS 701	THS 701	Thesis Write-up		3

Fourth Semester (3 Cr)				
S.No.	Course Code		Course Titles	Level	Credit Hours
1	THS 701	THS 701	Thesis Write-up		3
Total Credit Hours: 30					
Core: 15					
Dissertation: 6					
Electives: 9					

List of Electives					
S.No.	Course Code	Proposed Course Code	Course Titles	Concentration	Credit Hours
1	MSE 711	MSE 711	Seminars in Applied Economics/Applied Policy Analysis for Macroeconomic Development	Economics	3
2	MSE 712	MSE 712	Financial Economics	Finance	3
3	MSE 713	MSE 713	International Trade	Economics	3
4	MSE 714	MSE 714	Fiscal Policy	Finance	3
5	MSE 715	MSE 715	Monetary Policy	Finance	3
6	MSE 716	MSE 716	Environmental and Natural Resource Economics	Economics	3
7	MSE 717	MSE 717	Public Economics for Public Policy	Economics	3
8	MSE 718	MSE 618	Industrial Economics	Economics	3
9	MSE 719	MSE 619	Urban Economics	Economics	3
10	MSE 720	MSE 620	Economic Appraisal and Valuation	Finance	3
11	MSE 721	MSE 521	Research Methods	Economics	3

MS Finance (1.5 Years)

Campus: Islamabad & Karachi

Program Duration: 1.5 Years (3 Semesters)

Program Timing: Weekend

Eligibility Criteria:

Students eligible for the MS Finance Program should have 16 years of business/ relevant education, 50% marks in annual exams. 2.5/4.0 CGPA in semester system. Students with 16 years of non-business education will be required to do 30 credit hours of deficiency courses to become eligible for the MS Finance program.

Additionally, applicants must provide HEC verification of all academic certificates/ degrees.

Road Map Fiance (1.5 Years)

Semester 1

S/No	Codes	Course	Level	CH	Pre-requisite
1	MSF 700	Research Methods	Core	3	
2	MSF 840	Econometrics	Core	3	
3	MSF 702	Financial Modeling and VBA	Core	3	
4	MSF XXX	Elective-I	Specialization	3	

Semester 2

S/No	Codes	Course	Level	CH	Pre-requisite
1	MSF 704	Financial Econometrics	Core	3	
2	MSF XXX	Elective-II	Specialization	3	
3	MSF XXX	Elective-III	Specialization	3	
4	MSF XXX	Elective-IV	Specialization	3	

Semester 3

S/No	Codes	Course	Level	CH	Pre-requisite
1	MSF 702	Thesis	Core	6	

List of Elective Courses

S/No	Codes	Title of the Course	CH
1.	MSF 801	Advance Portfolio Analysis and Management	3
2.	MSF 802	Derivatives Investments	3
3.	MSF 803	Alternative Investments	3
4.	MSF 804	Fixed Income Investments and Analysis	3
5.	MSF 805	Asset Pricing Theory	3
6.	MSF 806	Real Estate Investments	3
7.	MSF 807	Behavioral Finance	3
8.	MSF 821	Advance Topics in Corporate Finance	3
9.	MSF 822	Case Studies in Corporate Finance	3
10.	MSF 823	Mergers and Acquisition Analysis	3
11.	MSF 824	International Finance and Investments	3
12.	MSF 825	Theory of Finance	3
13.	MSF 826	Financial Restructuring	3
14.	MSF 827	Asset Valuation	3
15.	MSF 828	Strategic Financial Management	3
16.	MSF 831	Financial System and Regulations	3
17.	MSF 832	Financial Risk Management and Derivatives	3
18.	MSF 833	Financial Institutions Management	3
19.	MSF 834	Insurance and Risk Management	3
20.	MSF 835	Structured Securities	3
21.	MSF 804	Fixed Income Investments and Analysis	3

Maritime Management (Specialization / Standalone Electives): 3 CH each.

Course Code	Course Title
MTM 101	Introduction to Maritime Industry
MTM 230	Introduction to Maritime Law and International Maritime Convention
MTM 215	Economics of Sea Transport & International Trade
MTM 222	Introduction to Coastal Zone Management
MTM 304	Port Operations and Management
MTM 306	Shipping Operations and Management

MTM 322	Fisheries Resources & Management
MTM 401	Coastal Eco-Tourism Development and Management
MTM 403	Maritime Innovation & Entrepreneurship
MTM 526	Maritime Business: China Pakistan Perspective under CPEC
MTM 521	Maritime Business and HRM
MTM 527	Maritime Management: Concept and Applications
MTM 528	Contemporary Issues of Maritime Management
MTM 529	Maritime Management in Pakistan: Past, Present and Future
HRM 508	Marine Environments and Administration

Foreign Language

CLE 401	Chinese Language

MS Marketing & Sales (1.5 Years)

Campus: Islamabad
Program Duration: 1.5 Years (3 Semesters)
Program Timing: Weekend
Eligibility Criteria:

Applicant must have 16 years of Business or Management education/ equivalent degree with 2.5/4 CGPA or 50% marks. Students with non-business background will take deficiency courses as per HEC rules.

Semester 1

Sr.	Course Title	Credit Hours
MSM 701	Applied Approaches to Branding & Communication	3
MSM 704	Research Philosophy and Quantitative Techniques	3
MSM 721	Advanced Marketing research & Consumer Behavior	3
	Elective 1	3

Semester 2

Sr.	Course Title	Credit Hours
MSM 722	Emerging Concepts of Channels & Distribution	3
	Elective 2	3
	Elective 3	3
SDW 698	Independent Market Study/Research Project	3

Semester 3

Sr.	Course Title	Credit Hours
	Elective 4	3
MSMRD 803	Dissertation	6

List of Electives:

MSM 831	Seminar in Sales Force Management
MSM 832	Marketing Analytics and Data Mining
MSM 833	Entrepreneurial Marketing
MSM 834	Topics in Strategic Sales Management
MSM 835	Philosophy of Customer Relationship Management
MSM 836	Perspectives of Retailing & Franchise Management
MSM 837	Corporate Sales & Key Account Management
MSM 816	Marketing Modeling and Game Theory
MSM 801	Discourse of Personal Selling
MKT 689	Digital Marketing
MKT 696	Marketing Planning

MS Management Sciences (1.5 Years)

Campus: Islamabad, Lahore & Karachi

Program Duration: 1.5 Years (3 Semesters)

Program Timing: Weekend

Eligibility Criteria: 16 Years education, Masters/ Bachelor's Degree with a minimum 50% marks or CGPA 2.5/4.0 in relevant discipline.

- NTS GAT (Gen)/GRE (Gen) passed with minimum 50% marks or BU test (50% minimum passing marks).
  Result are to be submitted at the time of application in case of GAT (Gen)/GRE (Gen) or as prescribed by University.
- HEC's attestation on the candidate's local degrees (on the back of the original degrees).
- HEC's equivalency certificate for the candidate's foreign degrees.

Road Map MS Management Sciences (1.5 Years)

Semester-1

S/No	Codes	Course	Level	CH	Pre-requisite
1	MGT 705	Strategic Management: Contemporary Concepts, Theories and Applications	Core	3	
2	MGT 706	Advanced Research Methodology and Proposal Development	Core	3	
3	MGT 706	Advance Marketing Management: Concept and Applications	Core	3	
4	MGT XXX	Elective-I	Specialization	3	

Semester-2

S/No	Codes	Course	Level	CH	Pre-requisite
1	MGT 707	Strategic Finance: Concepts and Applications of Contemporary Views	Core	3	
2	MGT XXX	Elective-II	Specialization	3	
3	MGT XXX	Elective-III	Specialization	3	
4	MGT XXX	Elective-IV	Specialization	3	

Semester-3

S/No	Codes	Course	Level	CH	Pre-requisite
1	THS 702	Thesis	Core	6	

List of Electives

S/No	Codes	Title of the Course	CH
1.	MGT 813	Contemporary Issues in International Marketing: Concepts and Applications	3
2.	MGT 814	Corporate Governance and Sustainability	3
3.	MGT 824	Globalization	3
4.	MGT 817	HRM: Concepts and Applications	3
5.	MGT 811	Change Management: Concepts and Applications	3
6.	MGT807	Leadership in Organizations: Concepts and Applications	3
7.	MGT 888	Organizational Behavior and Management	3
8.	MGT 815	Financial Institution Management	3
9.	MGT 825	International Business and Economic Perspectives	3
10.	MSF 704	Financial Econometrics	3

Maritime Management (Specialization / Standalone Electives): 3 CH each.

Course Code	Course Title
MTM 101	Introduction to Maritime Industry
MTM 230	Introduction to Maritime Law and International Maritime Convention
MTM 215	Economics of Sea Transport & International Trade
MTM 222	Introduction to Coastal Zone Management
MTM 304	Port Operations and Management
MTM 306	Shipping Operations and Management
MTM 322	Fisheries Resources & Management

MTM 401	Coastal Eco-Tourism Development and Management
MTM 403	Maritime Innovation & Entrepreneurship
MTM 526	Maritime Business: China Pakistan Perspective under CPEC
MTM 521	Maritime Business and HRM
MTM 527	Maritime Management: Concept and Applications
MTM 528	Contemporary Issues of Maritime Management
MTM 529	Maritime Management in Pakistan: Past, Present and Future
HRM 508	Marine Environments and Administration

Foreign Language

CLE 401	Chinese Language

MS PM (1.5 Years)

Campus: Islamabad, Karachi & Lahore

Program Duration: 1.5 Years (3 Semesters)

Program Timing: Weekend

Eligibility Criteria:

16 Years education from HEC attestation recognized educational institutes CGPA: 2.50 / 4.00 or 50% marks for non-CGPA degree Additionally, applicants must provide HEC verification of all academic certificates / degrees.

Road Map MS PM (1.5 Years)

Semester 1

S/No	Codes	Course	Level	CH	Pre-requisite
1	MSP601	Fundamentals of Project Management	Core	3	
2	MSP602	Project Cost and Finance Management	Core	3	
3	MSP603	Project Human Resource & Communication Management	Core	3	

Semester 2

S/No	Codes	Course	Level	CH	Pre-requisite
1	MSP604	Project Planning, Scheduling & Time Management	Core	3	
2	MSP605	Project Risk Management	Core	3	
3	MSP606	Project Procurement & Contract Management	core	3	
4	MSPXXX	Project-1**	Project	3	

Semester 3 (12 Credit Hrs)

S/No	Codes	Course	Level	CH	Pre-requisite
1	MSP607	Project Quality Management	Core	3	
2	MSP608	Project Monitoring, Evaluation and Control Management	Core	3	
3	MSP**XXX**	Elective-1* **(Specialization)**	Specialization	3	
4	MSP**XXX**	Project-2**	Project	3	

List of Elective Programs

S/No	Codes	Title of the Course	CH
1.	MSP621	Disaster Management	3
2.	MSP622	Innovation and Technology Management	3
3.	MSP623	NGO Management	3
4.	MSP624	Scope and Integration Management	3
5.	MSP625	Government Projects	3
6.	MSP626	Project Supply Chain Management	3

7.	MSP627	Project Review, Assurance and Governance	3
8.	MSP628	Project Communication and Stakeholder Management	3

Projects

S/No	Codes	Title of the Course	CH
1.	MSP 631	Primavera CBT	3
2.	MSP 632	EPM Microsoft Project Server (2010) CBT	3
3.	MSP 633	SharePoint Solutions CBT	3
4.	MSP 634	Available for CBT Projects	3
5.	MSP 635	Project Management Office	3
6.	MSP 636	Advance Skills for Project Management Professionals	3
7.	MSP 629	Project in controlled environment	3
8.	MSP 630	Agile Project Management	3
9.	MSP 625	Government Projects (PC-1 - PC-5)	3

Maritime Management (Specialization / Standalone Electives): 3 CH each.

Course Code	Course Title
MTM 101	Introduction to Maritime Industry
MTM 230	Introduction to Maritime Law and International Maritime Convention
MTM 215	Economics of Sea Transport & International Trade
MTM 222	Introduction to Coastal Zone Management
MTM 304	Port Operations and Management
MTM 306	Shipping Operations and Management
MTM 322	Fisheries Resources & Management
MTM 401	Coastal Eco-Tourism Development and Management
MTM 403	Maritime Innovation & Entrepreneurship

MTM 526	Maritime Business: China Pakistan Perspective under CPEC
MTM 521	Maritime Business and HRM
MTM 527	Maritime Management: Concept and Applications
MTM 528	Contemporary Issues of Maritime Management
MTM 529	Maritime Management in Pakistan: Past, Present and Future
HRM 508	Marine Environments and Administration

Foreign Language

| CLE 401 | Chinese Language |

MS SCM (1.5 Years)

Campus: Islamabad
Program Duration: 1.5 Years (3 Semesters)
Program Timing: Weekend

Eligibility Criteria:

16 years' education from HEC attestation recognized educational institutes with business/commerce background CGPA: 2.50 / 4.00 or 50% marks for non-CGPA degree.

Additionally, applicants must provide HEC verification of all academic certificates / degrees.

Road Map SCM (1.5 Years)

First Semester – 9 Credit Hours:
- Fundamentals of SCM
- Supplier Selection and Bid Evaluation
- Negotiating and Contracting in Procurement & Supply

Second Semester – 12 Credit Hours
- Business Research Methods focus on Supply Chain Management
- Inventory and Logistics Operations
- Operations Management & Supply Chain
- Contemporary Issues in SCM

Third Semester – 12 Credit Hours (Module 1)
- Strategic Supply Chain Mgt.
- Supply Chain Finance
- Elective-1
- Elective-2

Third Semester – 12 Credit Hours (Module 2)
- Strategic Supply Chain Mgt.
- Supply Chain Finance
- Research Thesis in SCM

Specialization (elective) Courses
- Leadership in SCM
- Managing Risks in Supply Chains.
- Supply Chain Diligence
- Category Management in Procurement and Supply
- Regulatory Framework for Trade Harmonization in International SCM
- Mathematical Modeling in SCM*
- Software Simulations in SCM*

Maritime Management (Specialization / Standalone Electives): 3 CH each.

Course Code	Course Title
MTM 101	Introduction to Maritime Industry
MTM 230	Introduction to Maritime Law and International Maritime Convention
MTM 215	Economics of Sea Transport & International Trade
MTM 222	Introduction to Coastal Zone Management
MTM 304	Port Operations and Management
MTM 306	Shipping Operations and Management

MTM 306	Shipping Operations and Management
MTM 322	Fisheries Resources & Management
MTM 401	Coastal Eco-Tourism Development and Management
MTM 403	Maritime Innovation & Entrepreneurship
MTM 526	Maritime Business: China Pakistan Perspective under CPEC
MTM 521	Maritime Business and HRM
MTM 527	Maritime Management: Concept and Applications
MTM 528	Contemporary Issues of Maritime Management
MTM 529	Maritime Management in Pakistan: Past, Present and Future
HRM 508	Marine Environments and Administration

Foreign Language

CLE 401	Chinese Language

MS (HRM & ORGANIZATIONAL PSYCHOLOGY) (2 Years)

Campus: Karachi

Program Duration: 1.5 Years (3 Semesters)

Program Timing: Weekend

Eligibility Criteria:

Management sciences and psychology / sociology background.

- CGPA 2.50 or above in the Fnal degree, on hand, if degree obtained from a CGPA based system.
- Minimum 50% marks if degree obtained from a non-CGPA program.
- Must pass Bahria University Admission Test. And / Or
- GAT General with 50 marks obtained in less than two years prior to admissions.

Additionally, applicant must provide HEC verification of all academic certificates / degrees.

Road Map of MS - HRM & OP (2 Years)

Semester 1

S/No	Codes	Course	Level	CH	Pre-requisite
1	HRP 701	Contemporary HRM and Practices	Core	3	
2	HRP 702	Personnel Selection and Advanced Counseling Skills	Core	3	
3	HRP 703	Organizational Psychology and Psychometrics	Core	3	

Semester 2

S/No	Codes	Course	Level	CH	Pre-requisite
1	HRP 704	Applied Attitude and Behavioral Analysis	Core	3	
2	HRP 705	Contemporary Issues in Business and Industry	Core	3	
3	HRP XXX	Elective-I	Specialization	3	

Semester 3:

S/No	Codes	Course	Level	CH	Pre-requisite
1	HRP 708	Advance Research Methodology and Proposal Development	Core	3	
2	HRP XXX	Elective-II	Specialization	3	
3	HRP XXX	Elective-III	Specialization	3	

Semester 4:

S/No	Codes	Course	Level	CH	Pre-requisite
1	HRP 719	Internship	Core	3	
2	HRP 700	Research Thesis	Core	6	

List of Electives

S/No	Codes	Title of the Course	CH	Remarks
1.	HRP 709	Leadership Issues in Organizations: Concepts and Applications	3	
2.	HRP 710	Theories of Learning and Conditioning	3	
3.	HRP 711	Communication Strategies of Scholars	3	

4.	HRP 712	Seminars in Organizational Behaviors	3	
5.	HRP 713	Culture and Persuasion	3	
6.	HRP 714	Social and Self-Development	3	
7.	HRP 715	Abnormal Psychology	3	
8.	HRP 716	Industrial Relations and Labor Laws	3	
9.	HRP 717	Seminars in Organizational Development	3	
10.	HRP 718	Seminars in Human Resource Development	3	

Maritime Management (Specialization / Standalone Electives): 3 CH each.

Course Code	Course Title
MTM 101	Introduction to Maritime Industry
MTM 230	Introduction to Maritime Law and International Maritime Convention
MTM 215	Economics of Sea Transport & International Trade
MTM 222	Introduction to Coastal Zone Management
MTM 304	Port Operations and Management
MTM 306	Shipping Operations and Management
MTM 322	Fisheries Resources & Management
MTM 401	Coastal Eco-Tourism Development and Management
MTM 403	Maritime Innovation & Entrepreneurship
MTM 526	Maritime Business: China Pakistan Perspective under CPEC
MTM 521	Maritime Business and HRM
MTM 527	Maritime Management: Concept and Applications
MTM 528	Contemporary Issues of Maritime Management
MTM 529	Maritime Management in Pakistan: Past, Present and Future
HRM 508	Marine Environments and Administration

Foreign Language

CLE 401	Chinese Language

Topics for Research in Maritime Domain for MBA/ MS/MPhil/PhD
1. Shipping Industry of Pakistan: Scope and Dimensions for Development in Global and Regional Perspective
2. Maritime Education and Research: Employment Scope and Development Avenues in Pakistani Perspective under BRI and CPEC
3. Employment and Entrepreneurship Opportunities: Maritime Education and Skill needs of Pakistan in CPEC Scenario of 2025 and Beyond

4. Management of Warehouses: New Trends under Technology Dominance, Pakistan a Case in Point
5. Marine Oil Spill: Past, Present and Future Status of Pakistani Coastal Protection and Disaster Management
6. Port Management under Technology Dominance: Karachi Port Trust and its Significance in
7. Pakistan's Economy
8. Port Management under Technology Dominance: The Port Muhammad Bin Qasim and its
9. Significance in Pakistan's Economy
10. Effective Cargo Management: Managing Shipping Containers at Pakistani Ports, a Case in Point
11. State of Maritime Container Terminals in Pakistan: Significance of Automated Systems
12. Shipping Industry in Pakistan: Current Status and its Future in view of CPEC Scenario of 2025-2030
13. Issues of Port Safety in Pakistan: Management Risks and Solutions as Per International Standards
14. Boat Construction Dynamics in Pakistan: Its significance and Future in View of CPEC Scenario of 2025-2030.
15. Gawadar Fish Harbor: Its Significance, Development Prospects and Future under CPEC Expansions
16. Maritime Security: Current Status and its Future In view of BRI and CPEC Scenario of 2030.
17. Pakistan and China Collaborations for Enhancing Growth of Maritime industry in Pakistan.
18. Entrepreneurship, Innovation and Finance for Sustainable Development and Exploration of Maritime resources.
19. Challenges Expected to be Faced By Developing Countries After the Decade of the Ocean (2021-2030)
20. Scope and Dimensions of Shipping Industry of Pakistan for Development in Regional and Global Perspective.
21. Concept of Smart Port and Cargo Management Practices: Recommendations for Pakistan under CPEC Perspective
22. Prospects of Economic Growth and Social Development through Maritime

Education in Pakistan
23. Smart Shipping, Ports, Transportation and Global Connectivity through BRI and CPEC.
24. Role of Gwadar Port in Employment Opportunities, Social Development and Poverty Alleviation.
25. Concept of Blue Economy and Opportunities of Growth and Development in Pakistani Perspective under BRI and CPEC
26. Sustainable Energy, Mineral Resources and Development of Innovative Industries in Maritime Sector of Pakistan.
27. Maritime Safety, Security and Regulatory Policies of Pakistan and Implications under CPEC Development.
28. Measuring Impact of Green Supply Chain Management on Corporate Performance of Manufacturing Industries in Gwadar Special Economic Zone (Predicting Future through Mixed Method Approach).
29. Forecasting Impact of Green Supply Chain Practices at Gwadar Industrial Zone on Future of Organizational Performances and Businesses.
30. Gwadar Industrial Zone in 2040: Supply Chain Management Impacting Financial Outlays of Organizations and their Sustainability.
31. Gwadar Industrial Zone in 2040: Comparative Study of Conventional and Green Supply Chain Practices Impacting Organizational Sustainability.
32. Supply Chain Management at Transit Points of Gwadar Industrial Zone: Measuring Impact of Technology on Sustainability of Organizations.

PhD Management Sciences (3 Years)

Campus: Islamabad, Karachi & Lahore

Program Duration: 3 Years (6 Semesters)

Program Timing: Evening

Eligibility Criteria:
- MS/MPhil degree or equivalent with eighteen (17.5) years of education in a subject relevant to the held of Study.
- A minimum CGPA of 3.0 out of 4.0 in the semester system or 60% marks in the annual system.
- Following Documents shall accompany the application: A Statement of Purpose

and a Research Proposal in the area of interest for PhD programmes. NTS/GRE/ Equivalent Score Card with 60% marks or BU Test (70% passing Additionally, applicants must provide HEC verification of all academic certificates /degrees.

Road Map PhD Management Sciences (3 Years)

Semester One

S/No	Codes	Course	Level	CH	Pre-requisite
1	MGT 802	Advanced Qualitative Research Methods	Core	3	
2	MGT 805	Contemporary Issues in Management Sciences	Core	3	
3	MGT 806	Advanced Quantitative Research Methods	Core	3	

Semester Two

S/No	Codes	Course	Level	CH	Pre-requisite
1	MGT XXX	Elective-I	Specialization	3	
2	MGT XXX	Elective-II	Specialization	3	
3	MGT XXX	Elective-III	Specialization	3	

Semester Three

S/No	Codes	Course	Level	CH	Pre-requisite
1	TSH 900	Supervised Research: (Proposal Development)	Core	6	

Semester Four

S/No	Codes	Course	Level	CH	Pre-requisite
1	TSH 900	Supervised Research: (Thesis Write- up)	Core	6	

Semester Five

S/No	Codes	Course	Level	CH	Pre-requisite
1	TSH 900	Supervised Research: (Thesis Write- up)	Core	6	

Semester Six

S/No	Codes	Course	Level	CH	Pre-requisite
1	TSH 900	Supervised Research: (Thesis Write- up)	Core	6	

List of Electives

S/No	Codes	Title of the Course	CH
1.	MGT 830	Seminars in Organizational Behavior	3
2.	MGT 831	Communication Strategies for scholars	3
3.	MGT 832	Seminar in Behavioral Decision Making	3
4.	MGT 833	Seminar in International Human Resource Management	3
5.	MGT 834	Dissertation Research	3
6.	MGT 835	Industrial / Organizational Psychology.	3
7.	MGT 836	Seminar in economics of Strategy and Organization	3
8.	MGT 837	Seminar in Leadership and change Management	3
9.	MGT 838	Advanced International Business Management	3
10.	MGT 839	Intelligent Information systems Marketing Courses	3
11.	MGT 840	Seminar in Entrepreneurial Communication	3
12.	MGT 841	Behavior Research in Marketing	3
13.	MGT 842	Seminar in Behavioral Research in Marketing II: Consumer Behavior.	3
14.	MGT 843	Seminar in Product Planning	3
15.	MGT 844	Seminar in qualitative Research in Marketing: Strategic Models and Methods	3
16.	MGT 845	Empirical Analysis of Dynamic Decision Context	3
17.	MGT 846	Culture and Persuasion	3
18.	MGT 847	Seminar in International Marketing	3
19.	MGT 848	Advance topic in Marketing	3
20.	MGT 849	Marketing Research and Analysis	3
21.	MGT 850	Seminar in International Advertising	3
22.	MGT 851	Behavior Research in Marketing	3
23.	MGT 852	Production and Operations Management	3
24.	MGT 828	Financial Econometrics	3
25.	MGT 870	Behavioral Finance and Decision Making	3

PhD Economics (3 Years)

Campus: Islamabad

Program Duration: 3 Years (6 Semesters)

Program Timing: Evening

Eligibility Criteria:

The eligibility criteria for PhD Economics program is as follows:

- MS/ M-Phil economics degree (17.5/18 years of education) with consistently good academic record and minimum of 60% marks in the annual system or CGPA of 3.0 out of 4.00 in the semester system.

- A minimum of 60% marks in the GAT- subject test conducted by the National Testing Service (NTS) or Candidates must have at least 70% score in university based subject test.
- HEC's attestation on the candidate's local degrees (on the back of the original degrees).
- HEC's equivalency certificate for the candidate's foreign degrees.

Road Map PhD Economics (3 Years)

First Semester

S.No.	Course Code	Course Titles	Level	Credit Hours
1	ECO 801	Applied Microeconomic Theory	Core	3
2	ECO 802	Applied Macroeconomic Theory	Core	3
4		Elective 1	Elective	3

Second Semester

S.No.	Course Code	Course Titles	Level	Credit Hours
1	ECO 803	Advanced Econometric Methods	Core	3
2		Elective 2	Elective	3
3		Elective 3	Elective	3

List of Electives

S.No.	Course Code	Course Titles	Level	Credit Hours
1	ECO 811	Agricultural Development and Policy	Elective	3
2	ECO 812	Development Economics	Elective	3
3	ECO 813	Economic Growth and Distribution	Elective	3
4	ECO 814	Economics of Population	Elective	3
5	ECO 815	Environmental Economics	Elective	3
6	ECO 816	International Economics	Elective	3
7	ECO 817	Mathematical Economics	Elective	3
8	ECO 818	Monetary Economics	Elective	3
9	ECO 819	Topics in Advanced Econometrics	Elective	3

Third Semester

S.No.	Course Code	Course Titles	Credit Hours
1	TSH 900	Thesis	9

Fourth Semester

S.No.	Course Code	Course Titles	Credit Hours
1	TSH 900	Thesis	9

Fifth Semester

S.No.	Course Code	Course Titles	Credit Hours
1	TSH 900	Thesis	9

Sixth Semester

S.No.	Course Code	Course Titles	Credit Hours
1	TSH 900	Thesis	9

Summary

Subjects	Credit Hours
Core	9
Subjects	
Electives	9
PhD	36
Research	
Total Credit Hours	54

DEPARTMENT OF MARITIME SCIENCES

Programs offered:
- BS Maritime & Buinsess Management (2 Years)
- BS Maritime & Buinsess Management (4 Years)
- MS Maritime Ports & Shipping Management (2 Years)
- MS Maritime Trade and Logistics (Years)

BS Maritime & Buinsess Management (2 Years)

Campus: Karachi

Program Duration: 2 Years (4 Semesters)

Program Timing: Morning

Eligibility Criteria:
14 Years qualification in the form of an Associate Degree in Nautical Sciences/Ship Management, BSc in Maritime Studies or related fields. With 2 CGPA or 50 % marks.

Road Map BS Maritime & Buinsess Management (2 Years)

Semester-1

Sr.No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1		MTM 101	Introduction to Maritime Industry	3	Yes	–
2		ECO 101	Fundamentals of Economics	3	Yes	–
3		ENG 105	Functional English	3	Yes	–
4		Fin 201	Fundamental of Accounting and Finance	3	Yes	–
5		MKT 110	Principle of Marketing	3	Yes	–
6		MTM 322	Fisheries Resources & Management	3	Yes	–
Total Credit Hours in Semester-1				**18**		

Semester-2

Sr.No.	Pre-requisite course code	Course Code	Course Title	Credit hours	Theory	Practical
1		MTM 222	Introduction to Coastal Zone Management	3	Yes	–
2		HRM 353	Human Resource Management	3	Yes	–
3		MAT 205	Statistics	3	Yes	–
4		MTM 305	Maritime Logistics	3	Yes	–
5		MTM 304	Port Operations and Management	3	Yes	–
6		MIS 460	E-Commerce	3	Yes	–
Total Credit Hours in Semester-2				**18**		

Semester-3

Sr.No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1		MTM 401	Coastal Eco-Tourism Development and Management	3	Yes	–
2		MTM 306	Shipping Operations and Management	3	Yes	
3		MRM 302	Research & Project Writing Methods	3	Yes	–
4		MTM 224	Marine Pollution & Control	3	Yes	

Semester-4

Sr.No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	MRM 302	SDW 499	Project / Thesis	6	Yes	–
2	MTM 322	MTM 403	Maritime Innovation & Entrepreneurship	3	Yes	
3			Elective 3	3	Yes	–
4			Elective 4	3	Yes	–
Total Credit Hours in Semester-4				**15**		

Summer Semester

Sr.No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1		MTM 223	Marine Insurance	3	Yes	
2	MTM 101	GEO 115	Introduction to Geophysics	3	Yes	
3		MTM 230	Introduction to Maritime Law and International Maritime Convention	3	Yes	–
Total Credit Hours in Semester				**9**		

POOL OF ELECTIVES

Sr.No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1		MTM 601	Conservation Ecology	3	Yes	–
2		MTM 602	Planktology	3	Yes	–
3		MTM 603	Natural Hazards and Management	3	Yes	–
4		MTM 604	Coastal and Marine Sedimentology	3	Yes	–
5		MTM 605	Sea Level changes and Coastal Zones	3	Yes	–
6		MTM 606	Coastal Tourism Management	3	Yes	–
7		MTM 607	Coastal Land Reclamation	3	Yes	–
8		MTM 608	Mangrove Coastal Forest Management	3	Yes	–
9			Sea level Changes and Coastal Zones	3	Yes	–
10		MTM 610	Ocean Waves, Tides & Currents	3	Yes	–
11		MTM 611	Maritime Safety & Security	3	Yes	–
12		MTM 612	Ship Brokerage, Chartering & E-Commerce	3	Yes	–

BS Maritime & Business Management (4 Years)

Campus: Karachi
Program Duration: 4 Years (8 Semesters)
Program Timing: Morning

Eligibility Criteria:

HSSC / Equivalent with 45% Marks

ROADMAP

Semester-1

S.NO	Codes	Course	Level	CH	Pre-requisite
1	ENG 105	Functional English	Core	3	
2	MAT 105	Mathematics	Core	3	
3	ITC 101	IT Skills	Core	3	
4	ECO 101	Fundamentals of Economics	Core	3	
5	MTM 101	Introduction to Maritime Industry	Core	3	
6	MGT 211	Self-Management	Core	3	

Semester-2

S.NO	Codes	Course	Level	CH	Pre- requisite
1	MGT 111	Principles of Management	Core	3	
2	BCM 121	Business Communication Skills	Core	3	
3	ISI 101/SOC 361	Islamic Studies/Ethics	Core	3	
4	GEO 115	Introduction to Geophysics	Core	3	MTM 101
5	MTM 120	Introduction to Meteorology & Oceanography	Core	3	
6	HSS 202	Introduction to Sociology	Core	3	

Semester-3

S.NO	Codes	Course	Level	CH	Pre- requisite
1	MTM 230	Introduction to Maritime Law & International Maritime Convention	Core	3	
2	ENG 132	Oral Communication & Public Speaking Skills	Core	3	
3	PAK 101	Pakistan Studies	Core	3	
4	FIN 205	Fundamentals of Accounting & Finance	Core	3	
5	MTM 202	Economics of Sea Transport & International Trade	Core	3	ECO 101
6	MGT 221	Management and Leadership	Core	3	

Semester-4

S.NO	Codes	Course	Level	CH	Pre- requisite
1	MTM 222	Introduction to Coastal Zone Management	Core	3	
2	MTM 223	Marine Insurance	Core	3	
3	MTM 224	Marine Pollution & Control	Core	3	
4	MTM 226	Regulatory Framework of Maritime Organizations	Core	3	
5	MAT 205	Statistics	Core	3	
6	HSS 225	Psychological & Emotional Development	Core	3	

Semester-5

S.NO	Codes	Course	Level	CH	Pre- requisite
1	MTM 304	Ports Operations & Management	Core	3	
2	MTM 305	Maritime Logistics Chain Management	Core	3	
3	MTM 303	Law of Carriage of Goods by Sea	Core	3	MTM 226
4	MKT 110	Principles of Marketing	Core	3	MGT 221
5	HRM 353	Human Resource Management	Core	3	
6	MIS 460	E-Commerce	Core	3	

Semester-6

S.NO	Codes	Course	Level	CH	Pre- requisite
1	MTM 306	Shipping Operations & Management	Core	3	MMT 301
2	MTM 322	Fisheries Resources & Management	Core	3	
3	MRM 302	Research & Project Writing Methods	Core	3	
4		Elective-I	Core	3	

| 5 | | Elective-II | Core | 3 | |
| 6 | | Elective-III | Core | 3 | |

Semester-7

S/NO	Codes	Course	Level	CH	Pre-requisite
1	MTM 401	Coastal Eco-Tourism Development and Management	Core	3	
2	MTM 402	Hydrographic Data & Services Management/Hydrography & Navigation	Core	3	
3	MTM 403	Maritime Innovation & Entrepreneurship	Core	3	MTM 322
4		Elective-IV	Elective	3	
5		Elective-V	Elective	3	

Semester-8

S.NO	Codes	Course	Level	CH	Pre-requisite
1	SDW 499	Project / Thesis	Core	6	MRM 302
2		Elective-VI	Elective	3	
3		Elective-VII	Elective	3	

List of Electives

S/No.	Course Code	Title of the Course	Credit Hours
1.	MTM 225	Maritime Business: China Pakistan Perspective Under CPEC	3
2.	MTM 521	Maritime Business & HRM	3
3.	MTM 522	Design Port Management	3
4.	MTM 528	Maritime Management: Concept and Applications	3
5.	MTM 529	Contemporary Issues of Maritime Management	3
6.	MTM 530	Maritime Management in Pakistan: Past, Present and Future	3
7.	ECO 521	Marine Techonology	3
8.	ECO 515	Union and Labor Laws	3
9.	ECO 502	Industrial Economics	3
10.	MTM 532	Occupational Health & Safety, Risk & Disaster Managemant	3

11.	HRM 508	Marine Environments & Administration	3
12.	MTM 523	Ship Chartering	3
13.	MTM 524	Custom Documentation	3

MS Maritime Ports & Shipping Management (2 Years)

Campus: Karachi

Program Duration: 2 Years (4 Semesters)

Program Timing: Weekend

Eligibility Criteria:

16 years of education with Masters/Bachelors or equivalent degree from an HEC recognized university in the relevant discipline/field of study with a minimum CGPA 2.5/4.0 or 50% marks where CGPA is not given. GAT (Gen)/GRE (General) passed with minimum 50% marks or BU test (50% minimum passing marks). Result are to be submitted at the time of application in case of GAT (General) or GRE (General) or as prescribed by the University.

ROADMAP

Semester-1

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1		MTM 701	Maritime Industry: Pakistan and China in Global Perspective	3	Yes	–
2		MTM 702	Ports and Shipping Management in Contemporary Environments	3	Yes	–
3		MTM 703	Maritime Law and International Maritime Convention	3	Yes	–
4		MTM 704	Maritime Economics and Finance	3	Yes	–
			Total Credit Hours in Semester-1	12		

Semester-2

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1		MTM 705	Coastal Zone Management and ContemporaryIssues	3	Yes	–
2		MTM 706	Marine Insurance, Risk and Disaster Management	3	Yes	–

3			Elective	3	Yes	–
			Total Credit Hours in Semester-2	9		

Semester-3

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1		RMT 705	Research Methodology and Proposal Development	3	Yes	–
2			Elective	3	Yes	–
3			Elective	3	Yes	–
			Total Credit Hours in Semester-3	9		

Semester-4

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	RMT 705	SDW 790	Thesis	6	Yes	–
			Total Credit Hours in Semester-4	6		

List of Elective Courses

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1		MTM 750	Maritime Trade and Industrial Economics	3	Yes	–
2		MTM 711	Logistics at Ports and Supply Chain Management	3	Yes	–
3		MTM 712	Hydrographic Data and Service Management	3	Yes	–
4		MTM 753	Chartering Practices and Ship Brokering	3	Yes	–
5		MTM 754	Intermodal Transportation	3	Yes	–
6		MTM 713	Maritime Logistics and Shipping	3	Yes	–
7		MTM 756	Marine Resources & Environment	3	Yes	–
8		MTM 757	Tourism, Fish & Food Processing	3	Yes	–
9		MTM 758	Ocean Governance Policy and Maritime Law	3	Yes	–
10		MTM 759	Introduction to Maritime Geophysics Geology	3	Yes	–
11		MTM 714	Dynamics of Maritime Domains	3	Yes	–
12		MTM 761	Maritime Security Issues and Strategies	3	Yes	–
13		MTM 762	Management of Oceanic Resources	3	Yes	–

MS Maritime Trade and Logistics (2 Years)

Campus: Karachi

Program Duration: 2 Years (4 Semesters)

Program Timing: Weekend

Eligibility Criteria:

16 years of education with Masters/Bachelors or equivalent degree from an HEC recognized university in the relevant discipline/field of study with a minimum CGPA 2.5/4.0 or 50% marks where CGPA is not given. GAT (Gen)/GRE (General) passed with minimum 50% marks or BU test (50% minimum passing marks). Result are to be submitted at the time of application in case of GAT (General) or GRE (General) or as prescribed by the University.

Road Map MS Maritime Trade and Logistics (2 Years)

Semester1

S.NO	Codes	Course	Level	CH	Pre-requisite
1	MTM 701	Maritime Industry	Core	3	
2	MTM 711	Maritime Trade and Logistics	Core	3	
3	MTM 703	Maritime Law & International Maritime Convention	Core	3	
4	MTM 712	Maritime Strategy	Core	3	

Semester-2

S.NO	Codes	Course	Level	CH	Pre-requisite
1	MTM 714	Supply Chain Management in Maritime Business and Trade	Core	3	
2	MTM 715	International Business and Economics	Core	3	
3		Elective-I	Elective	3	

Semester-4

S.No	Codes	Course	Level	CH	Pre-requisite
1	MTM 705	Research Methodology and Proposal Development	Core	3	
2		Elective-II	Elective	3	
3		Elective-III	Elective	3	

Semester-4

S.No	Codes	Course	Level	CH	Pre-requisite
1	SDW 790	Thesis	Core	6	RM

Electives

S.No	Course Code	Title of the Course	Credit Hours
16.	MTM 750	Maritime and Industrial Economics	3
17.	MTM 774	Port and Logistics Management	3
18.	MTM 776	Ships Security Threats, Financial and Commercial Implications	3
19.	MTM 773	Maritime Business Management	3
20.	MTM 771	Globalization and Maritime Trade	3
21.	MTM 775	Tanker Operations	3
22.	MTM 772	Maritime Technologies & Commercial Application	3
23.	MTM 777	Coastal Zone Managment and Maritime Emergency Preparations	3
24.	MTM 778	Custom Clearing and Freight Forwarding	3
25.	MTM 759	LNG Shipping	3

Bahria Humanities & Social Sciences School

Humanities & Social Sciences

Programs offered:

- BS Public Health (4 Years)
- Bachelor of Social Sciences (4 Years)
- BS English
- MS (Applied Anthropology)
- MS (IR)
- PhD (International Relations)

BS Public Health (4 Years)

Campus: Islamabad & Karachi
Program Duration: 4 Years (8 Semesters)
Program Timing: Morning
Eligibility Criteria:
FA/FSc or Equivalent 50% passing marks

Roadmap of BS(PH)

Semester	Course	Course Code	Credit Hours	No. of Courses
First	English I	ENG 103	3	6
	Pakistan Studies	PAK 101	2	
	Mathematics	MAT 105	3	
	Life Sciences Biology	LSB 110	3	
	Sociology of Health and Disease	SHD 111	3	
	Basic Computer Skills	BCM 109	3	
			17	
Second	English II	ENG 104	3	6
	Ethics/Islamic Studies	ISL 101	2	
	Basic Statistics	BST 108	3	
	Principles of Psychology	PPS 112	3	
	Medical Anthropology	MAP 113	3	
	Personal Hygiene	PHY 118	3	
			17	
Third	English III	ENG 201	3	5
	Introduction to Information Communication Technology	ICT 217	3	
	Population Dynamics	POD 214	3	
	Primary Health Care	PHC 215	3	
	Concept of Health and Disease	CHD 219	3	
			15	
Fourth	English IV (any other subject may be offered)	ENG 204	3	5
	Professional Ethics	PET 216	3	
	Basic Epidemiology	BEP 220	3	
	Basic Biostatistics	BB1 221	3	
	Health Promotion, Advocacy & Social Mobilization	PAS 222	3	
			15	

Fifth	Community Nutrition Community Pediatrics Fundamental Principles of Infectious Disease	CNT 323 CPD 324 FIN 328	**3** **3** **3**	**5**
	Communicable Disease Epidemiology Non Communicable Disease Epidemiology	CDE 329 NCE 330	**3** **3**	
			15	
Sixth	Reproductive Health	RPH 325	**3**	**6**
	Environment& Occupational Health Health Policy and Management	EOH 326 HPM 331	**3** **3**	
			18	
Seventh	Mental Health	MHL 427	**3**	**6**
	Health Marketing Research Methodology Disaster Management*(Elective 1)* Health Information System*(Elective 2)* Research Project Planning	HMT 442 REM 435 DSM 443 HIS 444 RSP 441	**3** **3** **3** **3** **3**	
			18	
Eight	Microbiology			**6**
	Entomology Parasitology Health Project Management*(Elective 3)* Adolescent & Sexual Health*(Elective 4)* Research Project Implementation	MIB 436 ETL 437 PAR 438 HPM 445 ASH 446 RSI 442	**3** **3** **3** **3** **3** **3**	
			18	
	Note: *Field Visits and Seminars by students will be non-credit, but compulsory subjects spread over each Semester*			

Bachelor of Social Sciences (4 Years)

Campus: Islamabad & Karachi
Program Duration: 4 Years (8 Semesters)
Program Timing: Morning
Eligibility Criteria: FA/FSc or Equivalent 50% passing marks

Major Requirements
Foundation Courses International Relations = 24 Credit Hours Development Studies= 24 Credit Hours Anthropology= 27 Credit Hours Sociology = 24 Credit Hours
Elective Courses International Relations = 42 Credit Hours Development Studies= 42 Credit Hours Anthropology= 24 Credit Hours Sociology = 24 Credit Hours
Specialization/Major Courses International Relations = 12 Credit Hours Development Studies= 12 Credit Hours Anthropology= 27 Credit Hours Sociology = 24 Credit Hours
Research & Thesis/ Paper Writing International Relations = 06 Credit Hours Development Studies= 06 Credit Hours Anthropology= 06 Credit Hours (Compulsory) Sociology = 24 Credit Hours
Internship International Relations= 2 Credit Hours Development Studies= 2 Credit Hours Sociology = 24 Credit Hours

a. English & Communication Skills Courses

Course Code	Course Title
ENG 103	English I
ENG 104	English II
ENG 105	Oral Communication

b. Pakistan & Islamic Studies

Course Code	Course Title
PAK 101	Pakistan Studies
ISL 101	Islamic Studies

c. General Courses

Course Code	Course Title
HSS 115	Introduction to Media Studies
HSS 111	Introduction to International Relations
HSS 112	Introduction to Political Science
HSS 102	Introduction to Philosophy
HSS 117	Introduction to Economics
HSS 107	Introduction to Psychology
HSS 110	Introduction to Development Studies
HSS 201	Introduction to Anthropology
HSS 202	Introduction to Sociology
HSS 307	Islamic History: The Formative Phase

d. Basic Essential Skills

Course Code	Course Title
BES 101	Introduction to Computer
BES 102	Creative Writing
BES 103	Critical Thinking
BES 105	Argumentation and Presentational Skills
BES 106	Research Methodology

e. Basic Sciences

Course Code	Course Title
MAT 105	Mathematics
MAT 110	Calculus & Analytical Geometry
MAT 205	Statistics
ENV 100	Fundamentals of Biology
ENV 105	Introduction to Environmental Sciences
PHY 101	Environmental Physics or Physics (PHY 101)
ENV 200	Fundamentals of Ecology

Majors in Development Studies

Students of Development Studies must complete 78 credit hours of taught courses in their area of concentration with the following distribution:

a) 24 hours of foundation courses; and
b) 42 hours of elective courses,
c) 12 hours of specialization

Optional research paper worth 6 credits from the 7th semester onwards is also offered. Those opting for research will be exempted from two courses worth 6 Credit hours.

Foundation Courses (08 Courses)

DST 301	Introduction to Microeconomics
DST 302	Introduction to Macroeconomics
DST 303	Theories of Development: Contending Perspectives
HSS 400	Philosophy of Social Sciences
HSS 402	Qualitative Research Methods
HSS 401	Statistical Analysis of Social Data
DST 312	Rural Development: Issues and Challenges
DST 310	Poverty Alleviation: Contending Approaches

Elective Courses (14 Courses)

DST 308	Sociology of Development
DST 401	Sustainable Development & Livelihood Strategies
DST 402	Social Development: Issues & Approaches
DST 403	Civil Society & Development
DST 406	Women Empowerment: Issues and Perspectives
DST 410	Development Project: Planning, Appraisal & Implementation
DST 411	Development Project: Monitoring & Evaluation
DST 404	Global Development Experiments
DST 405	Globalization & World Development
DST 337	Governance, Democracy & Development in Countries in Transition

DST 413	Law & Development
DST 338	Disaster Management & Assistance
DST 339	Foundation of Social Policy
DST 344	Religion & Development
DST 340	Human Rights & Development
DST 341	Conflict and Peace
DST 342	Political Paradigm in Developing Countries
DST 343	Health & Development: Perspectives, Issues and Practices
DST 345	Contemporary Issues in Child Protection

Specialization Courses (4 Courses)

DST 307	Development Economics
DST 309	International Development
DST 408	Development Communication
DST 409	Development Policy: Process & Institutions
DST 414	Migration, Diaspora & Development
DST 336	Climate change Politics, Policy & Practice

Research Courses (3 courses)

RES 300	Review of Literature & Research Proposal
RES 400	Data Collection & Seminars
RES 500	Research Paper Writing & Defense

Majors in International Relations

Students of International Relations must complete 78 credit hours of taught courses in their area of concentration with the following distribution:

a) 24 hours of foundation courses; and
b) 42 hours of elective courses,
c) 12 hours of specialization

Optional research paper worth 6 credits from the 7th semester onwards is also offered. Those opting for research will be exempted from two courses worth 6 Credit hours.

Foundation Courses (08 Courses)

IRS 301	Theories of International Relations
IRS 307	International Relations since 1945
IRS 308	International Organizations
IRS 309	International Law
IRS 403	Theories of Globalization
IRS 302	Foreign Policy of Pakistan
IRS 303	Global Political Economy
IRS 314	Diplomacy

Elective Courses (14 Courses)

IRS 313	Foreign Policy Analysis
IRS 319	Government and Politics in Pakistan
IRS 310	Foreign Policies of Great Powers
IRS 401	Human Rights & Global Politics
IRS 402	Global Environmental Politics
IRS 409	Strategic Studies
IRS 410	Conflict & Conflict Resolution
IRS 417	Arms Control & Disarmament
IRS 323	Comparative Political Systems
IRS 311	American Foreign Policy
IRS 404	Issues in North-South Relations
IRS 408	International Terrorism
IRS 315	Politics of Developing Nations
IRS 411	Religion & Politics
IRS 412	Theories of Nationalism
IRS 413	Democratic Transitions: Issues & Challenges
IRS 321	Politics of Development
IRS 322	International Financial Institutions
IRS 415	Global Governance & Development
IRS 416	Politics of Social Welfare
IRS 312	The Muslim World & International Politics
IRS 330	Geo Political Structure of the World
IRS 420	Nuclear Security and Non-Proliferation

Specialization Courses (4 courses)

IRS 405	International Politics of South Asia
IRS 325	State & Society of South Asia
IRS 406	International Politics of Central Asia
IRS 320	Government & Politics in Central Asia
IRS 407	International Politics of Southeast Asia
IRS 326	American Government & Politics
IRS 327	Politics in European Union
IRS 328	Government and Politics in the Middle East

Research Courses (3 courses)

RES 300	Review of Literature & Research Proposal
RES 400	Data Collection & Seminars
RES 500	Research Paper Writing & Defense

Majors in Anthropology

Students of Development Studies must complete 78 credit hours of taught courses in their area of concentration with the following distribution:

a) 27 hours of foundation courses; and
b) 24 hours of elective courses,
c) 27 hours of major courses

Compulsory research paper worth 6 credits from the 7th semester onwards is also offered.

Foundation Courses (09 courses)

ANT 102	Anthropological Theories
ANT 103	Ethnographic Research Methods
ANT 104	Kinship & Social Organization
ANT 105	Physical Anthropology
ANT 106	Archaeological Anthropology
ANT 107	Linguistic Anthropology
ANT 108	Social & Cultural Change
ANT 109	Ethnology of Pakistan
ANT 110	Applied Anthropology

Major Courses (09 courses)

ANT 201	Economic Anthropology
ANT 202	Anthropology of Beliefs & Rituals
ANT 203	Medical Anthropology
ANT 204	Environmental Anthropology
ANT 205	Political Anthropology
ANT 206	Urban Anthropology
ANT 207	Anthropology of Globalization
ANT 208	Epistemology of Ethnographic Research
ANT 209	Anthropology of Development

Elective Courses (08 courses)

ANT 301	Visual Anthropology
ANT 302	Ethnomusicology
ANT 303	Public Health
ANT 304	Ethnomedicine
ANT 305	Anthropology of Science & Technology
ANT 306	Anthropology of Cyberspace
ANT 307	Legal Anthropology
ANT 308	Anthropology of Public Policy
ANT 309	Migration & Diaspora
ANT 310	Corporate Anthropology
ANT 311	Anthropology of Food
ANT 312	Political Ecology
ANT 313	Anthropology of Anthropocene
ANT 314	Disasters & Displacement
ANT 315	Urban Anthropology
ANT 316	Anthropology of South Asia
ANT 317	Anthropology of Education & Learning
ANT 318	Psychological Anthropology
ANT 319	Sociolinguistics

ANT 320	Asia Civilizations
ANT 321	Museum Anthropology
ANT 322	Forensic Anthropology
ANT 323	Anthropology of Islam
ANT 324	Gender & Society
ANT 325	Anthropology of Peace & Conflict
ANT 326	Myths and Folklore
ANT 327	Ethnicity, Nationality & Identity
ANT 328	Anthropology of Art
ANT 329	Anthropology of Crimes & Criminality
ANT 330	Anthropology of Media

Road Map of BSS

Semester 1

Course Code	Course Title	Credit Hours	Pre-Requisite
ENG 103	English I	3	
PAK 101	Pakistan Studies	2	
BES 101	Introduction to Computers	3	
One general course		3	
One general course		3	
One general course		3	

Semester 2

Course Code	Course Title	Credit Hours	Pre-Requisite
ENG 104	English II	3	English I
ENV 105	Introduction to Environmental Sciences	3	
BES 106	Research Methodology	3	
BES 103	Critical Thinking	3	
One general course		3	
One general course		3	

Semester 3

Course Code	Course Title	Credit Hours	Pre-Requisite
ENG 105	Oral Communication	3	English II
MAT 105	Mathematics	3	

ISL 101	Islamic Studies	2	
One general course		3	
One general course		3	
One general course		3	

Declare Your Majors
Major in Development Studies

Semester 4

Course Code	Course Title	Credit Hours	Pre-Requisite
DST 301	Introduction to Microeconomics	3	
DST 310	Poverty Alleviation: Contending Approaches	3	
DST 303	Theories of Development: Contending Perspectives	3	
HSS 400	Philosophy of Social Sciences	3	
HSS 402	Qualitative Research Methods	3	
DST 312	Rural Development: Issues & Challenges	3	

Semester 5

Course Code	Course Title	Credit Hours	Pre-Requisite
DST 302	Introduction to Macroeconomics	3	Introduction to Microeconomics
HSS 401	Statistical Analysis of Social Data	3	
Elective 1		3	
Elective 2		3	
Elective 3		3	

Elective 4		3	

Semester 6

Course Code	Course Title	Credit Hours	Pre-Requisite
Elective 1		3	
Elective 2		3	
Elective 3		3	
Elective 4		3	
Elective 5		3	
Elective 6		3	

Possible time for 2-months Internship in the summers.

Declare Your Specialization

Semester 7

Course Code	Course Title	Credit Hours	Pre-Requisite
Elective 1		3	
Elective 2		3	
Specialization 1		3	
Specialization 2		3	
RES 300	Review of Literature & Research Proposal	1	
RES 400	Data Collection & Seminars	3	

Semester 8

Course Code	Course Title	Credit Hours	Pre-Requisite
Elective 1		3	
Elective 2		3	
Specialization 1		3	

Specialization 2		3	
RES 500	Research Paper, Writing & Defense	2	Data Collection & Seminars

Note: RES 300, RES 400 and RES 500 are for Research Students Only.

Majors in International Relations

Semester 4

Course Code	Course Title	Credit Hours	Pre-Requisite
IRS 301	Theories of International Relations	3	
IRS 307	International Relations Since 1945	3	
IRS 314	Diplomacy	3	
IRS 302	Foreign Policy of Pakistan	3	
Elective 1		3	
Elective 2		3	

Semester 5

Course Code	Course Title	Credit Hours	Pre-Requisite
IRS 303	Global Political Economy	3	
IRS 308	International Organizations	3	
IRS 309	International Law	3	
IRS 403	Theories of Globalization	3	
Elective 1		3	
Elective 2		3	

Semester 6

Course Code	Course Title	Credit Hours	Pre-Requisite
Elective 1		3	
Elective 2		3	
Elective 3		3	
Elective 4		3	
Elective 5		3	
Elective 6		3	

Possible time for 2-months Internship in the summers.

Declare Your Specialization

Semester 7

Course Code	Course Title	Credit Hours	Pre-Requisite
Elective 1		3	
Elective 2		3	
Specialization 1		3	
Specialization 2		3	
RES 300	Review of Literature & Research Proposal	1	
RES 400	Data Collection & Seminars	3	

Semester 8

Course Code	Course Title	Credit Hours	Pre-Requisite
Elective 1		3	
Elective 2		3	
Specialization1		3	
Specialization2		3	
RES 500	Research Paper, Writing & Defense	2	Data Collection & Seminars

Note: RES 300, RES 400 and RES 500 are for Research Students Only.

Majors in Anthropology

Semester 4

Course Code	Course Title	Credit Hours	Pre-Requisite
ANT 102	Anthropological Theories	3	
ANT 110	Applied Anthropology	3	
ANT 202	Anthropology of Beliefs & Rituals	3	
ANT 204	Environmental Anthropology	3	
ANT 207	Anthropology of Globalization	3	
ANT 206	Urban Anthropology	3	

Semester 5

Course Code	Course Title	Credit Hours	Pre-Requisite
ANT 105	Physical Anthropology	3	
ANT 109	Ethnology of Pakistan	3	
ANT 201	Economic Anthropology	3	
Elective 1		3	
Elective 2		3	
Elective 3		3	

Semester 6

Course Code	Course Title	Credit Hours	Pre-Requisite
ANT 103	Ethnographic Research Methods	3	
ANT 108	Social & Cultural Change	3	
ANT 203	Medical Anthropology	3	
ANT 209	Anthropology of Development	3	
Elective 1		3	
Elective 2		3	

Declare Your Specialization

Semester 7

Course Code	Course Title	Credit Hours	Pre-Requisite
ANT 107	Linguistic Anthropology	3	
ANT 104	Kinship and Social Organization	3	
ANT 106	Archeological Anthropology	3	
Elective 1		3	
RES 300	Review of Literature & Research Proposal	1	
RES 400	Data Collection & Seminars	3	

Semester 8

Course Code	Course Title	Credit Hours	Pre-Requisite
ANT 205	Political Anthropology	3	
ANT 208	Epistemology of Ethnographic Research	3	
Elective 1		3	
Elective 2		3	
RES 500	Research Paper, Writing & Defense	2	Data Collection & Seminars

Note: Research is Compulsory for Students of Anthropology

Majors in Sociology

Semester 4

Course Code	Course Title	Credit Hours	Pre-Requisite
SCO 301	Classical Sociological Theories	3	
SCO 304	Quantitative Research Methodology	3	
SCO 307	Sociology of Gender Issues	3	
HSS 400	Philosophy of Social Sciences	3	
Major 1		3	
Major 2		3	

Semester 5

Course Code	Course Title	Credit Hours	Pre-Requisite
SCO 302	Pakistani Society and Culture	3	
SCO 303	Sociology of Migration & Urbanization	3	
SCO 305	Qualitative Research Methodology	3	
SCO 306	Contemporary Sociological theories	3	

| Major 1 | | 3 | |
| Major 2 | | 3 | |

Semester 6

Course Code	Course Title	Credit Hours	Pre-Requisite
Major 1		3	
Major 2		3	
Major 3		3	
Major 4		3	
Major 5		3	
Major 6		3	

Possible time for 2-months Internship in the summers.

Semester 7

Course Code	Course Title	Credit Hours	Pre-Requisite
Major 1		3	
Major 2		3	
Minor 1		3	
Minor 2		3	
RES 300	Review of Literature & Research Proposal	1	
RES 400	Data Collection & Seminars	3	

Semester 8

Course Code	Course Title	Credit Hours	Pre-Requisite
Major 1		3	
Major 2		3	
Minor 1		3	

Minor 2		3	
RES 500	Research Paper, Writing & Defense	2	Data Collection & Seminars

Note: RES 300, RES 400 and RES 500 are for Research Students Only.

Majors in Sociology

Students of Sociology must complete 78 credit hours of taught courses in their area of concentration with the following distribution:
a)   24 hours of foundation courses; and
b)   42 hours of major courses,
c)   12 hours of minor courses.

Optional research paper worth 6 credits from the 7th semester onwards is also offered. Those opting for research will be exempted from two courses worth 6 Credit hours.

Foundation Courses (08 Courses)

SCO 301	Classical Sociological Theories
SCO 302	Pakistani Society and Culture
SCO 303	Sociology of Migration & Urbanization
SCO 304	Quantitative Research Methodology
SCO 305	Qualitative Research Methodology
SCO 306	Contemporary Sociological theories
SCO 307	Sociology of Gender Issues
HSS 400	Philosophy of Social Sciences

Major Courses (14 Courses)

SCO 308	Sociology of Youth
SCO 309	Project Planning and Management
SCO 310	Community Development
SCO 311	Population Dynamics
SCO 312	Rural Sociology
SCO 313	Urban Sociology
SCO 314	Sociology of Health
SCO 315	Sociology of Social Change and Development
SCO 316	Sociology of Education
SCO 317	Sociology of Globalization
SCO 318	Organizational Behaviour
SCO 319	Human Resource Management
SCO 320	Political Sociology
SCO 321	Environmental Sociology
SCO 322	Conflict Resolution
SCO 323	Clinical Sociology
SCO 324	Sociology of Media
SCO 325	Sociology of Law & Human Rights
SCO 326	Rural Development
SCO 327	Urban Development
SCO 328	Industrial Sociology
SCO 329	Islamic Sociology
SCO 330	Sociology of Aging
SCO 331	Sociology of Race and Ethnicity

Minor Courses (4 Courses)

SCO 332	Criminology
SCO 333	NGO Management
SCO 334	Sociology of Religion
SCO 335	Sociology of Emotions and Human Feelings
SCO 336	Sociology of Family and Marriage
SCO 337	Sociology of Violence & Terrorism
SCO 338	Sociology of Governance and Social Policy
SCO 339	Public Sociology

Research Courses (3 courses)

RES 300	Review of Literature & Research Proposal
RES 400	Data Collection & Seminars
RES 500	Research Paper Writing & Defense

BS English (4 Years)

Campus: Karachi
Program Duration: 4 Years (8 Semesters)
Program Timing: Morning
Eligibility Criteria:

Intermediate Examination or its equivalent with minimum of 50% marks in any discipline and at least 50% marks in the subject of English

ROADMAP

Semester-1

Course Code	Course Title	Credit Hours
ENG 105	Functional English (English-I)	3
PAK 100	Pakistan Studies	2
ENG 103	Introduction to Literature-1 (Drama & Poetry)	3
ENG 104	Introduction to Linguistics	3
HSS 102	Introduction to Philosophy	3
HSS 107	Introduction to Psychology	3

Semester- 2

Corse Code	Course Title	Credit Hours
ENG 120	English Writing Skills(English-II)	3
ISL 100	Islamic Studies	2

HSS 111	Introduction to International Relations	3
ENG 110	History of English Literature-1 (Medieval to Romantics)	3
MAT 105	Mathematics	3
ENG 112	Phonetics and Phonology	3

Semester- 3

Course Code	Course Title	Credit Hours
ENG 201	Oral Communication& Presentation Skills (English-III)	3
ENG 202	Morphology and syntax-1	3
ENG 203	Introduction to Literature-2 (novel & prose)	3
BES 204	Introduction to Computer Application	3
ECO 205	Economics	3
MGT 206	Entrepreneurship	3

Semester-4

Course Code	Course Title	Credit Hours
ENG 207	Advance Academic reading &writing skills (English-III)	3
HSS 208	Human rights & citizenship	3
HSS 209	Gender Studies	3
ENG 210	Semantics	3

ENG 211	History of English Literature-2 (Romantics to Present Age)	3
QTM 212	Introduction to statistics	3

Semester-5

Course Code	Literature(Major)	Credit hours	Course Code	Linguistics (Major)	Credit Hours
ENG 301	Visionary discourse – compulsory	3	ENG 301	Visionary discourse -compulsory	3
ENG 302	Literary Criticism	3	ENG 309	Morphology and syntax-II	3
ENG 303	Classical poetry (14-18th century)	3	ENG 310	Sociolinguistics	3
ENG 304	Novel -1(18-19th century)	3	ENG 311	Pedagogical Grammar	3

Semester-6

Course Code	Literature (Major)	Credit Hours	Course Code	Linguistics (Major)	Credit Hours
ENG 305	Research Methodology	3	ENG 305	Research Methodology	3
ENG 306	Literary Criticism and theory	3	ENG 312	Discourse analysis	3

ENG 307	Classics in drama	3	ENG 313	Psycholinguistics	3
ENG 308	Romantic poetry (19-20th century)	3	ENG 314	Lexical studies	3

Semester-7

Course Code	Literature (core)	Credit Hours	Course Code	Linguistics (core)	Credit Hours
ENG 401	Contemporary literature-1(poetry& drama)	3	ENG 405	Stylistics	3
ENG 402	South Asian literature	3	ENG 406	Language learning theories	3
ENG 403	American/ Canadian literature	3	ENG 407	Syllabus designing and testing	3
ENG 404	Translational theory and literary studies	3	ENG 408	TEFEL-1	3
	Elective 1 and 2 (3+3)	3		Elective 1 and 2 (3+3)	3

Semester-8

Course Code	Literature (core)	Credit Hours	Course Code	Linguistics (core)	Credit Hours
ENG 409	Contemporary literature-2	3	ENG 412	TEFEL-2	3

ENG 410	Post-colonial literature	3	ENG 413	Pragmatics	3
ENG 411	Literary discourse& journalistic writing	3	ENG 414	Introduction to Applied Linguistics	3
	Elective Project 3 and 4 (3+3)	3		Elective 3 and 4 (3+3)	3

NOTE:

- 3 Core are to be selected out of 4, making 9 CH. (In fourth year-spring semester.

- 2 Core are to be selected out of 3, making 6 CH.(In fourth year- fall semester)

- 2 courses are to be selected from the other specialization/stream in the 5th

- 1 course is to be selected from the other specialization/stream in the 6th

- University is authorized to offer any course (Core) out of the above mentioned, depending on the available expertise.

- It is mandatory for the students from Literature & Linguistics both to complete research project, of 3 CH, in final year spring semester.

Electives for literature

Course Code	Course Title	Credit Hours
ENG 515	Western Literature	3
ENG 516	World Literature	3
ENG 517	Feminist Literature	3
ENG 518	Comparative Studies	3

Electives for Linguistics

Course Code	Course title	Credit Hours
ENG 520	English for Specific Purposes	3
ENG 521	Translational Studies	3
ENG 522	English Language Teaching	3
ENG 523	Media Discourse Analysis	3

MS International Relations (2 Years)

Campus: Islamabad
Program Duration: 2 Years (4 Semesters)
Program Timing: Evening
Eligibility Criteria:

Candidates must meet the following minimum criteria for admissions in MS International Relations as per the rules of HEC.

1. Sixteen years of education In International Relations, Anthropology, Sociology, Development Studies, Political Science, Gender Studies, Behavioral Sciences, and Pakistan Studies or in a related field.
2. A minimum CGPA of 2.5 in the semester system or 50% marks in the annual system is mandatory.
3. Candidates must pass the entry test of Bahria University or GAT-General conducted by the National Testing Service with a minimum 50% cumulative score.

MS IR

Distribution of Courses/Road Map

Semester 1

Course Code	Course Title	Credit Hours
IRS 501	International Relations: Advance Theory and Practice	3
IRS 502	Advanced Research Methodology	3
IRS 504	Tradinational and Non-Tradinational Security Paradigms	3
IRS 504	Foreign Policy Analyses	3
	Total	12

Semester 2

Course Code	Course Title	Credit Hours
IRS 511	Ethnic Conflict in Global Perspective	3
IRS 513	Gulf War and its Consequences	3
IRS 516	Role of Non-State Actors in IR	3
IRS 518	Politics of South Asia	3
	Total	12

Semester 3 & 4

Course Code	Course Title	Credit Hours
THS-701	Thesis	3
THS-701	Thesis	3
	Total	6

MS Applied Anthropology (2 Years)

Campus: Islamabad
Program Duration: 2 Years (4 Semesters)
Program Timing: Evening
Eligibility Criteria:

Candidates with 16 years of education in Social/Natural Sciences and related disciplines having CGPA of 2.5/4.0 in the semester system, or 50% marks in the annual system. Candidate must pass the entry test of Bahria University or GAT-General.

ROAD MAP – MASTER OF SCIENCE IN APPLIED ANTHROPOLOGY

Semester-1 Sr.No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1		APA 501		Applied Anthropology in Community Development	3	
2		APA 502		History of Anthropological Thought	3	
3				Optional-1	3	
4				Optional-2	3	

Semester-2

Semester-1 Sr.No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1		APA 503		Research Methods in Anthropology	3	
2		APA 504		Contemporary Anthropological Theories	3	
3				Optional-3	3	
4				Optional-4	3	

Semester-3 & 4

Semester-1 Sr.No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1		THS 501	Thesis	3		

PhD International Relations (3 Years)

Campus: Islamabad
Program Duration: 3 Years (6 Semesters)
Program Timing: Evening
Eligibility Criteria:

Entry/admission requirement
1. A PhD candidate must have completed 18 years of education in any of the following subjects with a minimum CGPA of 3.0 out of 4.0 (semester system) or 60% (First Division) in annual system. The subjects include:

a. International Relations
b. Political Science
c. Defense and Strategic Studies
d. Defense and Diplomatic Studies
e. Peace and Conflict Studies
f. Government and Public policy
g. Area Studies
h. Development Studies
i. Political History
j. Media Studies
k. Pakistan Studies

2. NTS-GAT (Subject Test), or GRE (Subject Test) passed with minimum 60% marks or BU Admission Test with 70% Marks.
3. A statement of purpose of 2000 words shall also be submitted by the PhD candidate.
4. After submitting the required documents in the admission office of the campus, PhD candidate will appear before Departmental PhD Committee for interview and assessment of test, statement of purpose and relevant documents.

Revision of Curriculum of PhD program in line with the HEC PhD Policy 2021

Current Program Contents

1. Course Work (18 Credit hours)
2. Comprehensive Exam.
3. Dissertation (36 credit hours)
4. Final Defense.
5. The course work shall be completed with minimum CGPA of 3.0/4.0.

Scheme of Study

S. No	Course	Semester	Status	Credit Hours
1	Compulsory-I	1st	Compulsory	3
2	Compulsory-II	1st	Compulsory	3
3	Optional I	1st	Elective	3
4	Optional II	2nd	Elective	3
5	Optional III	2nd	Elective	3
6	Optional IV	2nd	Elective	3

Revised Program Content suggested by DBOS held on 12th March 2021

1. Course Work (48 Credit hours for BS Admission, 24 Credit Hours for MS Admission)
2. Comprehensive Exam.
3. Dissertation (36 credit hours)
4. Final Defense.
5. The course work shall be completed with minimum CGPA of 3.0/4.0.

List of courses

Compulsory Courses

S. No	Course	Semester	Status	Credit Hours
1	Compulsory-I	1st	Compulsory	3
2	Compulsory-II	1st	Compulsory	3
3	Optional I	1st	Elective	3
4	Optional II	2nd	Elective	3
5	Optional III	2nd	Elective	3
6	Optional IV	2nd	Elective	3

Elective Courses

Course Code	Course Title	Credit Hours
IRS-721	Theories of Comparative Politics	3
IRS-722	Seminar on Selected Contemporary Issues in International Politics	3
IRS-723	South Asia in Global Politics	3
IRS-724	Middle East in Global Politics	3
IRS-725	South East Asia in Global Politics	3
IRS-726	Central Asia in Global Politics	3
IRS-727	Latin America in Global Politics	3
IRS-728	Africa in Global Politics	3
IRS-729	Contemporary Muslim World	3
IRS-730	Comparative Study of Foreign Policies of Major Powers	3
IRS-731	Politics and Foreign Policy of USA	3
IRS-732	Politics and Foreign Policy of China	3
IRS-733	Politics and Foreign Policy of Russia	3
IRS-734	International Law and Organization	3
IRS-735	Regionalism: Theory and Practice	3
IRS-736	International Political Economy	3

IRS-737	Advanced Strategic Studies	3
IRS-738	Nuclear Studies	3
IRS-739	Contemporary Conflict Resolution	3
IRS-740	Media and International Relations	3
IRS-741	Contemporary Critical Debates in International Relations	3
IRS-742	Issues in Pakistan's Foreign Policy: Seminar Course	3
IRS-743	International Environmental Politics	3
IRS-744	Globalization, Modern State And Society	3
IRS-745	Dynamics of Security in International Relations	3
IRS-746	Dynamics of Modern Diplomacy	3
IRS-747	Climate Change, Sustainable Development and International Security	3
IRS-748	Refugees and Forced Migrants in International Relations	3
IRS-749	Politics of the Indian Ocean	3
IRS-703	Advanced Course on Foreign Policy Analysis	3
IRS-701	Advanced Course on Theories of International Relations	3
IRS-702	Advanced Course on Research Methodology	3
THS-900	PhD Thesis	36

BAHRIA UNIVERSITY LAW SCHOOL (BULS)

Programs offered:

- LLB
- LLM (General)
- LLM (International & Maritime Laws)
- PhD (Law)

LLB (5 Years)

Campus: Islamabad
Program Duration: 5 Years (10 Semesters)
Program Timing: Morning
Eligibility Criteria:

Candidates having passed Intermediates/A level or equivalent examination with 50% marks moreover cleared Law Admission Test (LAT) with 50% marks are eligible for admission however, those aspirants who have not appeared in LAT yet are also eligible to apply for admission but they have to submit result later with the required percentage, in other case admission will be cancelled. After successful completion of the course requirements, a student will be awarded LLB degree. This will be an academic as well as a professional degree in law and legal studies.

Road Map

Semester 1		
Course Code	**Course Description**	**Credit Hours**
LLB-111	ENGLISH-I	3
LLB-112	PAKISTAN STUDIES	2
LLB-117	INTRODUCTION TO SOCIOLOGY	3
LLB-114	FUNDAMENTALS OF ECONOMICS	3
LLB-115	INTRODUCTION TO LAW	3
LLB-118	SKILLS DEVELOPMENT	3
	TOTAL	17

Semester 2		
Course Code	**Course Description**	**Credit Hours**
LLB-121	ENGLISH –II	3
LLB-122	ISLAMIC STUDIES/ETHICS	2
LLB-123	PRICIPLES OF POLITICAL SCIENCE	3
LLB-124	LEGAL SYSTEM OF PAKISTAN	3
LLB-125	HISTORY (SOUTH ASIA)	3
LLB-127	LAW OF TORTS-1	3
	TOTAL	17

Semester 3		
Course Code	**Course Description**	**Credit Hours**
LLB-211	ENGLISH-III	3
LLB-217	INTRODUCTION TO LOGIC AND REASONING	3
LLB-213	ISLAMIC JURISPRUDENCE-I	3
LLB-219	LAW OF TORTS-II	3
LLB-215	LAW OF CONTRACT-I	3
LLB-218	CONSTITUTIONAL LAW-I (UK)	3
	TOTAL	18

Semester 4		
Course Code	**Course Description**	**Credit Hours**
LLB-222	HUMAN RIGHTS LAW	3
LLB-226	CONSTITUTIONAL LAW-II (US)	3

LLB-224	LAW OF CONTRACT-II	3
LLB-225	ISLAMIC JURISPRUDENCE-II	3
LLB-227	INTRODUCTION TO PSYCHOLOGY	3
	TOTAL	15

Semester 5

Course Code	Course Description	Credit Hours
LLB-311	JURISPRUDENCE-I	3
LLB-316	CONSTITUTIONAL LAW-III(PAKISTAN)	3
LLB-313	ISLAMIC PERSONAL LAW-I	3
LLB-314	CRIMINAL LAW-I	3
LLB-317	LAW OF PROPERTY	3
	TOTAL	15

Semester 6

Course Code	Course Description	Credit Hours
LLB-321	JURISPRUDENCE-II	3
LLB-326	LAW OF BUSINESS ORGANIZATIONS	3
LLB-323	ISLAMIC PERSONAL LAW-II	3
LLB-324	CRIMINAL LAW-II	3
LLB-327	LAND LAWS	3
	TOTAL	15

Semester 7

Course Code	Course Description	Credit Hours
LLB-411	PUBLIC INTERNATIONAL LAW-I	3
LLB-417	CONSTITUTIONAL DEVELOPMENT IN PAKISTAN	3
LLB-413	CIVIL PROCEDURE-I	3
LLB-414	CRIMINAL PROCEDURE-I	3

LLB-415	LAW OF EVIDENCE-I	3
LLB-416	LEGAL DRAFTING-I	3
	TOTAL	18

Semester 8

Couse Code	Course Description	Credit Hours
LLB-421	PUBLIC INTERNATIONAL LAW-II	3
LLB-422	EQUITY AND SPECIFIC RELIEF	3
LLB-423	CIVIL PROCEDURE-II	3
LLB-424	CRIMINAL PROCEDURE-II	3
LLB-425	LAW OF EVIDENCE-II	3
LLB-426	LEGAL DRAFTING-II	3
	TOTAL	18

Semester 9

Course Code	Course Description	Credit Hours
LLB-516	RESEARCH METHOD	3
LLB-517	MINOR ACTS	3
	ELECTIVE-I	3
	ELECTIVE-II	3
LLB-515	MOOT CASES AND PROFESSIONAL ETHICS	3
	TOTAL	15

Semester 10

Course Code	Course Description	Credit Hours
LLB-526	ADMINISTRATIVE LAW	3
LLB-527	INTERPRETATION OF STATUTES AND LEGISLATIVE DRAFTING	3
LLB-523	RESEARCH PROJECT	3

	ELECTIVE-III	3
	ELECTIVE-IV	3
	TOTAL	15

ELECTIVE LIST

Course Code	Course Description	Credit Hours
LLB 001	Alternate Dispute Resolution	3
LLB 002	Banking Laws	3
LLB 003	Conflict of Laws	3
LLB 004	Consumer Protection Laws	3
LLB 005	Custom and Tariff Laws	3
LLB 006	e-Commerce Law	3
LLB 007	Election Laws	3
LLB 008	Environmental Laws	3
LLB 009	Gender and Law	3
LLB 010	Insurance laws	3
LLB 011	Intellectual Property Laws	3
LLB 012	International Economic Law	3
LLB 013	International Humanitarian Law	3
LLB 014	International Institutions	3
LLB 015	International Trade Law	3
LLB 016	Islamic Commercial Laws	3
LLB 017	Labour Laws	3
LLB 018	Law and Development	3
LLB 019	Law and Energy	3
LLB 020	Law and Society in Pakistan	3
LLB 021	Local and Special Laws	3
LLB 022	Media Laws	3

LLB 023	Medical and Forensic Law	3
LLB 024	Mergers and Acquisitions	3
LLB 025	Islamic Legal Maxims	3
LLB 026	Public Interest Litigation	3
LLB 027	Securities Regulation	3
LLB 028	Shipping and Admiralty Laws	3
LLB 029	Taxation Laws	3
LLB 030	Telecommunication Laws	3
LLB 032	Competition Law	3
LLB 033	Parliamentary Studies	3
LLB 034	Air and Space Law	3
LLB 035	Cyber Security Law & Policy	3

LLM - General (2 Years)

Campus: Islamabad
Program Duration: 2 Years (4 Semesters)
Program Timing: Evening
Eligibility Criteria:

LL.B degree from Pakistan Bar Council (PBC)/ HEC recognized university/institute with minimum CGPA of 2.5/4.00 or 50% marks where CGPA is not given.

Road Map

	SUBJECTS	CREDITS
Compulsory Course	1	3
Optional	7	21
Thesis-I/Thesis-II	1	6
TOTAL	9	30

SEMESTER-1		
COURSE CODE	**COURSE TITLE**	**CREDITS**
LLM 700	RESEARCH METHODOLOGY	3
LLM-XXX	Elective-I	3
LLM-XXX	Elective-II	3
LLM-XXX	Elective-III	3
	Total	12
SEMESTER-2		
LLM-XXX	Elective-IV	3
LLM-XXX	Elective-V	3
LLM-XXX	Elective-VI	3
LLM-XXX	Elective-VII	3
	Total	12
SEMESTER-3		
LLM-725	THESIS-I	3
SEMESTER-4		
LLM-725	THESIS-II	3
LIST OF APPROVED ELECTIVE COURSES		
COURSE CODE	**SUBJECT TITLE**	**CREDIT HOUR**
LLM-701	ADMINISTRATIVE LAW	3
LLM-702	ALTERNATE DISPUTE RESOLUTION	3
LLM-703	BANKING LAW	3
LLM-704	COMMERCIAL/ BUSINESS LAW	3
LLM-705	COMPANY/ CORPORATE LAW	3
LLM-706	COMPARATIVE CONSTITUTIONAL LAW	3
LLM-707	COMPARATIVE ENVRONMENTAL LAW	3
LLM-708	COMPARATIVE HUMAN RIGHTS LAW	3

LLM-709	COMPARATIVE STUDY OF ISLAMIC AND WETERN JURISPRUDENCE	3
LLM-710	CONSTITUTIONAL LAW OF PAKISTAN	3
LLM-711	CRIMINOLOGY	3
LLM-712	INTELLECTUAL PROPERTY LAWS	3
LLM-713	INTERNATIONAL ECONOMIC LAW	3
LLM-714	INTERNATIONAL TRADE LAW	3
LLM-715	ISLAMIC LAW	3
LLM-716	LABOUR LAW	3
LLM-717	LAW AND POLITICS	3
LLM-718	LAW AND SOCIETY IN SOUTH ASIA	3
LLM-719	LAW OF EVIDENCE	3
LLM-720	LAW OF INTERNATIONAL INSTITUTIONS	3
LLM-721	LAW OF TAXATION	3
LLM-722	LEGAL HISTORY OF PAKISTAN AND INDIA	3
LLM-723	SHIPPING LAW	3
LLM-724	WESTERN JURISPRUDENCE AND LEGAL THEORY	3
LLM-726	CYBER SPACE LAW: INTERNET JURISDICTION AND DISPUTE RESOLUTION	3
LLM-727	CYBERCRIME: INTERNATIONAL COOPERATION AND DIGITAL INVESTIGATIONS	3
LLM-728	E-COMMERCE LAWS	3
LLM-729	MEDIA LAWS	3
LLM-730	GLOBAL SECURITY & HUMAN RIGHTS LAW	3
LLM-731	INTERNATIONAL REFUGEE LAW	3
LLM-732	INTERNATIONAL INVESTMENT LAW	3
LLM-733	COMPARATIVE CRIMINAL JUSTICE	3
LLM-734	INTERNATIONAL HUMANITARIAN LAW	3
LLM-735	IMMIGRATION LAW	3

LLM-736	LAW OF TREATISE	3
LLM-737	ISLAMIC LAW OF WAR AND PEACE	3
LLM-738	INTERNATIONAL CRIMINAL LAW	3
LLM-739	ENERGY AND CLIMATE CHANGE LAW	3
LLM-741	INTERNATIONAL MARITIME LAW	3
LLM-742	CARRIAGE OF GOODS BY SEA	3
LLM 743	INTERNATIONAL COMMERCIAL ARBITRATION	3
LLM 744	COMMERCIAL CONFLICT OF LAWS	3
LLM 745	SHIPPING CONTRACTS	3
LLM 746	MARINE INSURANCE	3
LLM 747	LAW OF MARINE ENVIRONMENT	3
LLM 748	CRIMES AT SEA	3
LLM 749	ADMIRALTY AND JURISDICTION	3
LLM 752	INTERNATIONAL LAW OF USE OF FORCE	3
LLM 753	INTERNATIONAL ENVIRONMENTAL LAW	3
LLM 754	ADVANCED COMPETITION LAW	3
LLM 755	ADVANCED SECURITIES LAW AND REGULATION	3
LLM 756	ISLAMIC FAMILY LAWS	3
LLM 757	BUSINESS ETHICS AND HUMAN RIGHTS	3

LLM - International & Maritime Laws (2 Years)

Campus: Islamabad
Program Duration: 2 Years (4 Semesters)
Program Timing: Evening
Eligibility Criteria:

LL.B degree from Pakistan Bar Council (PBC)/ HEC recognized university/institute with minimum CGPA of 2.5/4.00 or 50% marks where CGPA is not given.

Road Map

	SUBJECTS	CREDITS
Compulsory Course	4	12
Elective/Compulsory	4	12
Thesis-I/Thesis-II	1	6
TOTAL	9	30

	SEMESTER-1		
	COURSE CODE	**COURSE TITLE**	**CREDITS**
1	LLM-XXX	Compulsory-I	3
2	LLM-XXX	Compulsory-II	3
3	LLM-XXX	Compulsory-III	3
4	LLM-XXX	Compulsory-IV	3
	SEMESTER-2		
5	LLM-XXX	Elective-I	3
6	LLM-XXX	Elective-II	3
7	LLM-XXX	Elective-III	3
8	LLM-XXX	Elective-IV	3
	SEMESTER-3		
9	LLM-725	THESIS-I	3
	SEMESTER-4		
10	LLM-725	THESIS-II	3

LIST OF APPROVED COMPULSORY COURSES

Sr.No	Course Code	Subject Title	Credit Hour
1	LLM-700	RESEARCH METHODOLOGY	3
2	LLM-714	INTERNATIONAL TRADE LAW	3
3	LLM-741	INTERNATIONAL MARITIME LAW	3
4	LLM-742	CARRIAGE OF GOODS BY SEA	3

LIST OF APPROVED ELECTIVE COURSES

Sr.No	Course Code	Subject Title	Credit Hour
1	LLM-701	ADMINISTRATIVE LAW	3
2	LLM-702	ALTERNATE DISPUTE RESOLUTION	3
3	LLM-703	BANKING BLAW	3
4	LLM-704	COMMERCIAL/ BUSINESS LAW	3
5	LLM-705	COMPANY/ CORPORATE LAW	3
6	LLM-706	COMPARATIVE CONSTITUTIONAL LAW	3
7	LLM-707	COMPARATIVE ENVRONMENTAL LAW	3
8	LLM-708	COMPARATIVE HUMAN RIGHTS LAW	3
9	LLM-709	COMPARATIVE STUDY OF ISLAMIC AND WETERN JURISPRUDENCE	3
10	LLM-710	CONSTITUTIONAL LAW OF PAKISTAN	3
11	LLM-711	CRIMINOLOGY	3
12	LLM-712	INTELLECTUAL PROPERTY LAWS	3
13	LLM-713	INTERNATIONAL ECONOMIC LAW	3
14	LLM-715	ISLAMIC LAW	3
15	LLM-716	LABOUR LAW	3
16	LLM-717	LAW AND POLITICS	3
17	LLM-718	LAW AND SOCIETY IN SOUTH ASIA	3
18	LLM-719	LAW OF EVIDENCE	3
19	LLM-720	LAW OF INTERNATIONAL INSTITUTIONS	3
20	LLM-721	LAW OF TAXATION	3
21	LLM-722	LEGAL HISTORY OF PAKISTAN AND INDIA	3
22	LLM-723	SHIPPING LAW	3
23	LLM-724	WESTERN JURISPRUDENCE AND LEGAL THEORY	3
24	LLM-726	CYBER SPACE LAW: INTERNET JURISDICTION AND DISPUTE RESOLUTION	3
25	LLM-727	CYBERCRIME: INTERNATIONAL COOPERATION AND DIGITAL INVESTIGATIONS	3
26	LLM-728	E-COMMERCE LAWS	3
27	LLM-729	MEDIA LAWS	3
28	LLM-730	GLOBAL SECURITY & HUMAN RIGHTS LAW	3
29	LLM-731	INTERNATIONAL REFUGEE LAW	3
30	LLM-732	INTERNATIONAL INVESTMENT LAW	3
31	LLM-733	COMPARATIVE CRIMINAL JUSTICE	3
32	LLM-734	INTERNATIONAL HUMANITARIAN LAW	3
33	LLM-735	IMMIGRATION LAW	3
34	LLM-736	LAW OF TREATISE	3

35	LLM-737	ISLAMIC LAW OF WAR AND PEACE	3
36	LLM-738	INTERNATIONAL CRIMINAL LAW	3
37	LLM-739	ENERGY AND CLIMATE CHANGE LAW	3
38	LLM 743	INTERNATIONAL COMMERCIAL ARBITRATION	3
39	LLM 744	COMMERCIAL CONFLICT OF LAWS	3
40	LLM 745	SHIPPING CONTRACTS	3
41	LLM 746	MARINE INSURANCE	3
42	LLM 747	LAW OF MARINE ENVIRONMENT	3
43	LLM 748	CRIMES AT SEA	3
44	LLM 749	ADMIRALTY AND JURISDICTION	3
45	LLM 752	INTERNATIONAL LAW OF USE OF FORCE	3
46	LLM 753	INTERNATIONAL ENVIRONMENTAL LAW	3
47	LLM 754	ADVANCED COMPETITION LAW	3
48	LLM 755	ADVANCED SECURITIES LAW AND REGULATION	3
49	LLM 756	ISLAMIC FAMILY LAWS	3
50	LLM 757	BUSINESS ETHICS AND HUMAN RIGHTS	3

PhD Law (3 Years)

Campus: Islamabad
Program Duration: 3 Years (6 Semesters)
Program Timing: Evening
Eligibility Criteria:

- LLM degree from an HEC recognized university with a minimum CGPA of 3.0/4.0 (Semester System) or 60% marks (Annual System).
- Pre-qualification of LLB is also mandatory requirement.
- NTS-GAT (Subject) or GRE (Subject) Test passed with minimum 60% Marks or BU Admission Test (70% passing marks).
- Initial Research Proposal/Statement of Purpose is required at the time of PhD admission.

Road Map

Semester-1		
Course Title	**Course Title**	**Credit Hours**
LLP-801	Advanced Research Methods in Law(Compulsory)	3
LLP-XYZ	Elective 1	3
LLP-XYZ	Elective 2	3
Semester-2		
Course Title	**Course Title**	**Credit Hours**
LLP-XYZ	Elective 3	3
LLP-XYZ	Elective 4	3
LLP-XYZ	Elective 5	3
Course work of 18 credit hours will be complete after 2nd semester.		

	Credit Hours
Semester-3	
Comprehensive Exam	9
Approval Thesis Proposal	
Semester-4	
Research Work	9
Semester-5	
Research Work	9
Semester-6	
Research Work	9
Thesis	

Course Code	Course Title	Credit Hours
LLP-812	Thesis	36

Course Code	Course Title	Credit Hours
LLP-802	Legal History of the Subcontinent	3
LLP-803	Comparative Legal Theory/Philosophy	3
LLP-804	Law and Governance: Institutional Framework	3
LLP-805	Comparative Legal System and Procedure	3
LLP-806	Transformation of Sharia into Law: The Modern Application of Sharia	3
LLP-808	Technological Advancement in Law	3
LLP-809	Law and Regional Integration: With Focus On CPEC	3
LLP-810	Comparative Criminal Justice System	3
LLP-811	Comparative Human Rights Law	3
LLM-701	ADMINISTRATIVE LAW	3
LLM-702	ALTERNATE DISPUTE RESOLUTION	3
LLM-703	BANKING LAW	3
LLM-704	COMMERCIAL/ BUSINESS LAW	3
LLM-705	COMPANY/ CORPORATE LAW	3
LLM-706	COMPARATIVE CONSTITUTIONAL LAW	3
LLM-707	COMPARATIVE ENVIRONMENTAL LAW	3
LLM-708	COMPARATIVE HUMAN RIGHTS LAW	3
LLM-709	COMPARATIVE STUDY OF ISLAMIC AND WETERN JURISPRUDENCE	3
LLM-710	CONSTITUTIONAL LAW OF PAKISTAN	3
LLM-711	CRIMINOLOGY	3
LLM-712	INTELLECTUAL PROPERTY LAWS	3
LLM-713	INTERNATIONAL ECONOMIC LAW	3
LLM-714	INTERNATIONAL TRADE LAW	3
LLM-715	ISLAMIC LAW	3
LLM-716	LABOUR LAW	3
LLM-717	LAW AND POLITICS	3
LLM-718	LAW AND SOCIETY IN SOUTH ASIA	3
LLM-719	LAW OF EVIDENCE	3
LLM-720	LAW OF INTERNATIONAL INSTITUTIONS	3
LLM-721	LAW OF TAXATION	3
LLM-722	LEGAL HISTORY OF PAKISTAN AND INDIA	3
LLM-723	SHIPPING LAW	3
LLM-724	WESTERN JURISPRUDENCE AND LEGAL THEORY	3
LLM-726	CYBER SPACE LAW: INTERNET JURISDICTION AND DISPUTE RESOLUTION	3
LLM-727	CYBERCRIME: INTERNATIONAL COOPERATION AND DIGITAL INVESTIGATIONS	3
LLM-728	E-COMMERCE LAWS	3
LLM-729	MEDIA LAWS	3
LLM-730	GLOBAL SECURITY & HUMAN RIGHTS LAW	3

LLM-731	INTERNATIONAL REFUGEE LAW	3
LLM-732	INTERNATIONAL INVESTMENT LAW	3
LLM-733	COMPARATIVE CRIMINAL JUSTICE	3
LLM-734	INTERNATIONAL HUMANITARIAN LAW	3
LLM-735	IMMIGRATION LAW	3
LLM-736	LAW OF TREATISE	3
LLM-737	ISLAMIC LAW OF WAR AND PEACE	3
LLM-738	INTERNATIONAL CRIMINAL LAW	3
LLM-739	ENERGY AND CLIMATE CHANGE LAW	3
LLM-741	INTERNATIONAL MARITIME LAW	3
LLM-742	CARRIAGE OF GOODS BY SEA	3
LLM 743	INTERNATIONAL COMMERCIAL ARBITRATION	3
LLM 744	COMMERCIAL CONFLICT OF LAWS	3
LLM 745	SHIPPING CONTRACTS	3
LLM 746	MARINE INSURANCE	3
LLM 747	LAW OF MARINE ENVIRONMENT	3
LLM 748	CRIMES AT SEA	3
LLM 749	ADMIRALTY AND JURISDICTION	3
LLM 752	INTERNATIONAL LAW OF USE OF FORCE	3
LLM 753	INTERNATIONAL ENVIRONMENTAL LAW	3
LLM 754	ADVANCED COMPETITION LAW	3
LLM 755	ADVANCED SECURITIES LAW AND REGULATION	3
LLM 756	ISLAMIC FAMILY LAWS	3
LLM 757	BUSINESS ETHICS AND HUMAN RIGHTS	3

DEPARTMENT OF MEDIA STUDIES

Programs offered:

- BS (Media Studies)
- BS (TV Broadcasting & Digital Media)
- MS (Media Studies)
- PhD (Media Studies)

BS Media Studies (4 Years)

Campus: Islamabad & Karachi
Program Duration: 4 Years (8 Semesters)
Program Timing: Morning

Eligibility Criteria:

All candidates who have passed intermediate examination or its equivalent with a minimum of 50% marks in any discipline can apply for admission to BS Media studies.

Road Map

S. No	Course Code	Course Title	Credit Hrs.
Semester 1			
1	ENG 106	Functional English	3
2	PAK 101	Pakistan Studies	2
3	MED 105	International Relations	3
4	MED 107	Introduction to Mass Communication	3

S. No	Course Code	Course Title	Credit Hrs.
5	**MED 109**	Computer Skills for Mass Communication	3
6	**MED 110**	Photography	3
		Semester 2	
	ENG 104	Writing and Presentation Skills	3
	ISL 101	Islamic Studies	2
	MAT 105	Mathematics	3
	MED 108	Sociology	3
		Elective	3
		Elective	3
		Semester 3	
	MAT 205	Statistics	3
	ENG 114	Communication Skills	3
	MED 205	Political Science	3
	MED 207	Social Psychology	3
	MED 209	Journalistic Language	3
	MED 211	Introduction to Broadcast Media	3
		Semester 4	
	MED 202	Functional Urdu	3
	MED 204	Introduction to Advertising and Public Relations	3

	MED 206	Current Affairs	3
	MED 208	Introduction to Digital Media	3
	MED 210	News Writing and Reporting	3
	MED 212	Philosophy	3
		Semester 5	
	MED 301	Sub-Editing and Page Designing	3
	MED 303	Mass Communication Theory	3
	MED 305	Script Writing and Editing	3
	MED 307	Elements of Advertising	3
		Elective	3
		Elective	3
		Semester 6	
	MED 302	Feature, Column and Editorial Writing	3
	MED 304	Research Methods	3
	MED 306	Photo Journalism	3
		Elective	3
		Elective	3
		Elective	3
		Semester 7	
	MED 401	Online Journalism	3
	MED 403	Media Laws and Ethics	3

	ECO 205	Economics	3
	HSS 401	Statistical Analysis of Social Data	3
		Specialization 1	
		Specialization 2	
Semester 8			
	MED 402	Research Report/ Final Project/ Research Article	3
	MED 404	Development Support Communication	3
		Specialization 3	
		Specialization 4	
Electives for Major			
	MED 308	Video Editing	
	MED 309	World Cinema	
	MED 311	2D Animation	
	MED 312	Principles of Public Relations	
	MED 313	Musicology	
	MED 314	Media, Culture and Society	
	MED 315	Sound Design	
	MED 113	Intro to Film Studies	
	MED 111	Media and Society	

Specializations			
		1.	Electronic Media	
		2.	Print Media	
		3.	Advertising and Public Relations	
		4.	Media Management	
Electronic Media – Electives			
	MED 415	Television Journalism	
	MED 416	News writing and production	
	MED 417	Advanced cinematography	
	MED 418	Art Direction	
	MED 419	Documentary Production	
	MED 420	Film Direction	
	MED 421	Motion graphics and compositing	
	MED 422	Music video production	
	MED 423	Product development	
	MED 424	Storyboarding	
Print Media – Electives			
	MED 408	Community journalism	
	MED 409	Data journalism	
	MED 411	Magazine Production / Magazine program production	
	MED 412	Multimedia journalism	

	MED 413	Newspaper production	
	MED 414	Peace journalism	
Advertising & Public Relations			
	MED 430	Media Planning and Buying	
	MED 431	Campaign designing	
	MED 432	Market research	
	MED 433	TVC Production	
	MED 434	Copy writing	
	MED 435	Advertising strategy and planning	
	MED 436	Advanced free hand drawing	
	MED 437	2D/3D animation	
	MED 438	Brand Management	
	MED 439	Digital Advertising	
	MED 440	Copy and Layout Designing	
	MED 441	Crisis Communication and Management	
	MED 442	Event Management	
	MED 443	Media management and relations	
	MED 444	Persuasive writing	
	MED 445	PR Campaign designing	
	MED 446	Digital Public Relations	

	MED 448	Intercultural Communication	
	MED 449	Character Modeling	
	MED 450	3D Modeling	
	MED 452	Digital Illustrations	
	MED 453	3D Animations	
	MED 454	3D Character Animations	
Electives for Media Management			
	MED 455	Media Management and Marketing	
	MED 457	Integrated marketing communication	
	MGT 130	Management	
	HRM 353	Human Resource Management	
	ENG 243	Business Communication Skills	

BS TV Broadcasting & Digital Media (4 Years)

Campus: Islamabad
Program Duration: 4 Years (8 Semesters)
Program Timing: Morning

Eligibility Criteria:

All candidates who have passed intermediate examination or its equivalent with a minimum of 50% marks in any discipline can apply for admission to BS TV Broadcasting & Digital Media.

ROAD MAP

Semester One

S#	Course Code	Course Title	CH
01	ENG 111	Functional English – I	03
02	MTB 101	Computer Skills for Media	03
03	MTB 109	Introduction to Television	03
04	MED 209	Journalistic Language	03
05	PAK 101	Pakistan Studies	02
06		Elective*	03

Semester Two

S#	Course Code	Course Title	CH
01	ENG 113	English – II (Writing & Presentation Skills)	03
02	MED 208	Introduction to Digital Media	03
03	MTB 108	News Writing & Reporting in Broadcast Journalism	03
04	MAT 205	Statistics	03
05	ISL 101	Islamic Studies / (Ethics)	02
06		Elective*	03

Semester Three

S#	Course Code	Course Title	CH
01	MED 403	Media Laws and Ethics	03
02	MTB 202	Theories of Mass Communications – I	03
03	MED 206	Current Affairs	03
04	MED 448	Intercultural Communication	03
05	ENG 114	Communication Skills (English – III)	03
06		Elective*	03

Semester Four

S#	Course Code	Course Title	CH
01	MTB 215	Digital Marketing & Public Relations (PR)	03
02	MTB 212	Theories of Mass Communications – II	03
03	MTB 213	Introduction to Digital Gaming	03
04	MED 455	Media Management and Marketing	03
05	MTB 214	Cyber Psychology	03
06		Elective*	03

Semester Five

S#	Course Code	Course Title	CH
01	MTB 301	TV Script Writing	03
02	MTB 313	Graphic Designing & Visual Communication	03
03	MTB 317	Videography	03
04	MTB 304	Television Lighting System	03
05	MTB 305	Data Journalism	03
06		Elective*	03

Semester Six

S#	Course Code	Course Title	CH
01	MTB 314	TV Program Production	03
02	MTB 315	Television, Digital Media & Society	03
03	MTB 309	TV News Production & Presentation	03
04	MTB 316	Web Designing	03
05	MTB 312	Set Designing	03
06		Elective	03

Semester Seven

S#	Course Code	Course Title	CH
01	MTB 401	TV Studio & Floor Management	03
02	MTB 402	Documentary Production	03
03	MTB 415	Digital Media Analytics	03
04	MTB 416	Digital Storytelling	03
05		Elective*	03

Semester Eight

S#	Course code	Course Title	CH
01	MTB 417	TV Post Production	03
02	MTB418	Mass Media Research Methods	03
03	MTB 409	Research Project / Final Project	03
04	MTB 419	Elective* (Digital Media Literacy)	03

Total Credit Hours 133 + 02 Internship =135

*Elective course will be offered from the Electives List by the department conditional to the availability of resource and expertise

List of Elective Courses

S#	Course Code	Course Title	CH
1	MTB 104	Mass Media in Pakistan	03
2	MED 401	Online Journalism	03
3	MED 404	Development Support Communication	03
4	MED 207	Social Psychology	03
5	MTB 208	Comparing Media Systems	03
6	MTB 205	International Media Regulations	03
7	MTB 204	Writing for Internet	03
8	MED 306	Photojournalism	03
9	MED 437	2D/3D Animation	03
10	MTB 310	Television Commercial (TVC)	03
11	MTB 405	Television Program Analysis (Seminar)	03
12	MTB 410	Media Semiotics	03
13	MTB 411	Introduction to Film Making and Analysis	03
14	MTB 412	Electronic News Gathering (ENG)	03
15	MTB 413	Music Video Creation (MVC)	03
17	MTB 209	Evolution of Television	03
18	MTB 302	Process & Effects of Communication	03
19	MTB 311	Media & Social Psychology	03
20	MTB 404	TV & Globalization	03
21	MTB 403	Drama Production	03
22	MTB 414	Film and Cinematography	03
23	MTB 419	Digital Media Literacy	03

MS Media Studies (2 Years)

Campus: Islamabad & Karachi
Program Duration: 2 Years (4 Semesters)
Program Timing: Evening

Eligibility Criteria:

16 years of education with Bachelors/ equivalent degree from HEC recognized university in Media Studies/ Political Science/ International Relations or any other discipline of Social Sciences with the minimum CGPA of 2.5/4.0 or 50% marks where CGPA is not given.

GAT (Gen)/ GRE (General) passed with the minimum 50% marks or BU test (50% minimum passing marks). Results are to be submitted at the time of application in case of GAT (General) or GRE (General) or as prescribed by the University.

HEC's attestation on the candidate's local degrees (on the back of the original degrees). HEC's equivalency certificate for the candidate's foreign degrees.

Road Map

Semester 1: Total Credits		12	
1	MSM 600	Approaches to Mass Communication - I	
2	MSM 602	Communication Research Methods - I	
3	MSM	Elective-I	
4	MSM	Elective-II	

Semester 2: Total Credits		12	
1	MSM 601	Approaches to Mass Communication - II	
2	MSM 603	Communication Research Methods - II	
3	MSM	Elective-I	
4	MSM 607	MPhil Seminar	

Semester 3 & 4: Total Credits		16	
1	MSM 608	Thesis Proposal Writing / Literature Review 3	
2	MSM 609	Thesis Writing 3	

List of Elective Courses for MS Media Studies

Sr#	Course Code	TITLE OF COURSE	Cr. Hrs
1	MSM 610	Mass Media, Culture and society	3
2	MSM 604	International Communication	3
3	MSM 605	Pakistan Media: Prospects and challenges	3
4	MSM 606	Peace Journalism	3
5	MSM 613	Advanced Development Communication	3
6	MSM 612	Philosophy of social sciences	3
7	MSM 621	Theories of Influence on Media Content	3
8	MSM 614	Media and Politics	3
9	MSM 616	Semiotics	3
10	MSM 618	Political Communication	3
11	MSM 617	Media Culture and Society: A Critical Introduction	3
12	MSM 619	Film Studies and Critique	3
13	MSM 620	Media and Human Rights	3

PhD Media Studies (3 Years)

Campus: Islamabad
Program Duration: 3 Years (6 Semesters)
Program Timing: Evening

Eligibility Criteria:

18 year of education (MS/MPhil/equivalent degree) in relevant discipline from an HEC recognized university with a minimum CGPA of 3.00/4.00 (semester system) or 60% marks (annual system). HEC's attestation is required for all local degrees (on the back of original degree). HEC's equivalent certificate would be required for the candidate with foreign degree.

GAT (subject test), or GRE (subject test), or University Based Test passed with minimum 70 marks. Result has to be submitted at the time of admission.

SEMESTER-I
1   Research methods in Media Studies
2   Media Debate: Issues in Communication
3   Elective*
     *1: Theories of Influencing Media Content, 2: Media and Globalization, 3: Approaches to Media Affects

3 Total credit for 1st semester

SEMESTER - II
4   Methods of Content Analysis
5   Advances in Mass Comm. Research
     Elective**
     **1: Political Communication, 2: Media and Society, 3: Comparative Media Studies

3 Total credit for 2nd semester

SEMESTER - III
Comprehensive exam
Supervised research (PhD thesis) including defense and acceptance of research proposal

Total credit for 3rd semester

SEMESTER - IV
Supervised research (PhD thesis) including design and implementation of proposed solution.

SEMESTER -V
Supervised research (PhD thesis) including analysis of the results and thesis write-up.

SEMESTER -VI
Supervised research (PhD thesis) – submission of the final thesis for evaluation.

Total credit for PhD program   54

COMPULSORY COURSES

COURSE CODE	TITLE OF COURSE	CR. HRS
MSM 801	Research Methods in Media & Comm. Studies	3
MSM 802	Media Debate: Issues in Communication	3
MSM 804	Methods of Content Analysis	3
MSM 805	Advances in Mass Comm. Research	3

ELECTIVE COURSES

COURSE CODE	TITLE OF COURSE	CR. HRS
MSM 806	Political Communication	3
MSM 807	Media and Society	3
MSM 812	Approaches to Media Affects	3
MSM 803	Theories of Influencing Media Content	3
MSM 803	Media and Globalization	3
MSM 810	Media ethics and Law	3
MSM 809	Theories and Strategies of communication	3
MSM 808	Media & Sociology	3
MSM 811	Qualitative Research Methods	3

DEPARTMENT OF ISLAMIC STUDIES

MS ISLAMIC STUDIES - ISLAM & LIFE (2 Years)

Campus: Islamabad & Karachi
Program Duration: 2 Years (4 Semesters)
Program Timing: Evening

Eligibility Criteria:

Minimum Entry Level: 4 years Bachelor degree in BS (Islamic Studies)/M.A (Islamic Studies) or equivalent with Shahda Al Almia (Wafaq ul Madaras) with HEC equivalence or 16 year education in any field (Qualifying in the admission test of BU).

ROADMAP

First Semester (12 CR)

S.No.	Course Code	Course Title	Credit Hours
1	ISS 501	Arabic Language	3
2	ISS 502	Islam and Society	3
3	ISS 503	Islam and Nature	3
4		Elective-I	3
		Total Semester Credit Hours	12

Second Semester (12 CR)

S.No.	Course Code	Course Title	Credit Hours
1	ISS 504	Islamic Economic System	3
2	ISS 505	Islamic Fine Arts	3
3	ISS 506	Research Methodology	3
4		Elective-II	3
		Total Semester Credit Hours	12

Third Semester (3 Cr)

S.No.	Course Code	Course Title	Credit Hours
1	THS 701	Thesis Write-Up	03

Four Semester (3 Cr)

S.No.	Course Code	Course Title	Credit Hours
1	THS 701	Thesis Write-Up	03

LIST OF COMPULSORY COURSES

Course Code	Course Title	Credit Hours
ISS 501	Arabic Language	3
ISS 502	Islam and Society	3
ISS 503	Islam and Nature	3
ISS 504	Islamic Economic System	3
ISS 505	Islamic Fine Arts	3
ISS 506	Research Methodology	3

LIST OF ELECTIVE COURSES

Course Code	Course Title	Credit Hours
ISS 511	Adab –ul-ikhtilaf	3
ISS 512	Fiqh-ul-Seerah	3
ISS 513	Islam and Science	3
ISS 514	Selected Textual Study of Fiqh & Usool-e-Fiqh	3
ISS 515	The Methodology of Muhaddithin	3
ISS 516	Selected Study of Tafseer & Hadith	3
ISS 517	Trends in Tafseer	3
ISS 518	Orientalism and Orientalists	3
ISS 519	Islam and National Defence	3
ISS 520	Human Rights and Islam	3
ISS 521	Islam and Maritime	3

DEPARTMENT OF PROFESSIONAL PSYCHOLOGY

Programs offered:

- BS (Psychology)
- MS (Clinical Psychology)
- MPhil (Professional Psychology)
- PhD (Professional Psychology)

BS Psychology (4 Years)

Campus: Islamabad, Lahore & IPP
Program Duration: 4 Years (8 Semesters)
Program Timing: Morning

Eligibility Criteria:

Intermediate/A-level/Equivalent with at least 50% marks.

ROADMAP

Course Code	Course Title	Credits Hours
1st Semester		
ENG 103	English - I	3
PAK 101	Pakistan Studies	2
ENV 100	Fundamentals of Biology	3
BES 101	Introduction to Computers	3
PSY 107	Introduction to Psychology	3
		14

2nd Semester		
ENG 104	English - II	3
ECO 110	Microeconomics	3
MAT 105	Mathematics	3
SOP 105	Introduction to Social Psychology	3
HIS 109	History and Schools of Psychology	3
ISL 101/HSS 116	Islamic Studies/ Ethics (For Non-Muslims)	2
		17

3rd Semester		
ENG 232	Oral Communication	3
ECO 121	Macroeconomics	3
MKT 110	Principles of Marketing	3
PER 214	Theories of Personality - I	3
COU 443	Counseling	3
EXP 216	Experimental Psychology - I	3
		18

4th Semester		
BES 102	Creative Writing	3
MGT 111	Principles of Management	3
PER 219	Theories of Personality - II	3
LSP 220	Psychology of Lifespan	3
EXP 221	Experimental Psychology - II	3
PRC 222	Psychological Practicum	2
		17

5th Semester		
MAT 205	Statistics	3
	University Requirement	3
MHP 325	Mental Health & Psychopathology - I	3
COG 326	Cognitive Psychology	3
POS 327	Positive Psychology	3
TES 328	Psychological Testing - I	3
		18

6th Semester		
	University Requirement	3
STA 330	Statistical Tools for Social Sciences	3
MHP 331	Mental Health & Psychopathology - II	3
NEU 332	Neurological Basis of Behavior	3
CLI 333	Clinical Psychology	2
TES 334	Psychological Testing - II	3
		17
7th Semester		
	University Requirement	3
INT 436	Internship	2
RES 437	Research Methodology - I	3
EDU 442	Educational Psychology	2
	Elective Courses: Choose one	
TEL 438	Teaching & Learning	3
COB 439	Consumer Behavior	
PCC 440	Psychology of Cross Cultural Differences	
CLP 441	Clinical Pharmacology	
	Elective Courses: Choose one	
HIV 443	Counseling for HIV/ AIDs and STIs	3
CHP 444	Child Psychology	
PSM 445	Psychology of Motivation	
HTP 457	Health Psychology	
MPY 439	Maritime Psychology	
		16
8th Semester		
RES 446	Research Methodology - II	3
ORG 454	Organizational Psychology	2
RES 455	Research Project	4
	Elective Courses: Choose one	

COP 447	Community Psychology	3
PSC 448	Psychology of Special Children	
ENV 449	Environmental Psychology	
HRM 353	Human Resource Management	
IPP 450	Islamic Approaches to Psychology and Psychotherapy	
	Elective Courses: Choose one	
PSL 451	Psychology of Leadership	3
GRD 452	Group Dynamic	
FRP 456	Forensic Psychology	
ABA 453	Applied Behavioral Analysis	
SEP 458	Sports and Exercise Psychology	
		15

Non Psychology Courses: 57 Cr. Hrs
Psychology Courses: 75 Cr. Hrs
Total Credit Hours: 132 Cr. Hrs
UNIVERSITY REQUIREMENT ELECTIVE COURSES

S.No.	Course Code	Course title	Credit Hours
1	HSS 216	Deviant Behavior	3
2	HSS 103	Introduction to Interior Design	3
3	HSS 204	Social Problems	3
4	HSS 110	Introduction to Development Studies	3
5	HSS 111	Introduction to International Relations	3
6	HSS 113	Introduction to Modern World History	3
7	MTB 201	Media Law and Ethics	3
8	MST 405	Investigative and Interpretive Reporting	3
9	HSS 102	Introduction to Philosophy	3
10	ANT 101	Introduction to Anthropology	3
11	HSS 202	Introduction to Sociology	3
12	HSS 115	Introduction to Media Studies	3

MS Clinical Psychology (2 Years)

Campus: Islamabad, Lahore & IPP
Program Duration: 2 Years (4 Semesters)
Program Timing: Evening

Eligibility Criteria:

Minimum 16 years of education in the relevant field of Psychology with a minimum of 50% marks (in annual system) or CGPA 2.5/4.0 (in semester system). GAT (General) with minimum 50% marks required at the time of admission or University Test.

ROADMAP

1st Semester

Unified Course Code	Course Title	No. of Credit Hours
CPY 643	Humanistic and Existential Therapies	2
CPY 644	Applied Behavioral Analysis	2
CPY 645	Psychodiagnosis & Intellectual & Neuropsychological Assessment	3
PPY 702	Research Methods	3
CPY 647	Neurological Basis of Behavior	2

2nd Semester

Unified Course Code	Course Title	No. of Credit Hours
CPY 652	Cognitive Behavioral Therapy	2
CPY 648	Personality Assessment	3
CPY 653	Pharmacology	2
CPY 654	Internship-I	2

3rd Semester

Unified Course Code	Course Title	No. of Credit Hours
CPY 649	Psychodynamic Therapies	3
CPY 650	Psychopathology & Psychotherapies of Children/ Adolescents	3
CPY 613	Internship II	3
CPY 753	Dissertation I	3

4th Semester

Unified Course Code	Course Title	No. of Credit Hours
CPY 745	Internship - III	3
CPY 744	Dissertation II	3

Coursework   =   25 Credit Hours
Internship   =   08 Credit Hours
Dissertation   =   06 Credit Hours
Total   =   39 Credit Hours

MPhil PROFESSIONAL PSYCHOLOGY (2 Years)

Campus: IPP
Program Duration: 2 Years (4 Semesters)
Program Timing: Evening

Eligibility Criteria:

Minimum 16 years of education in the relevant field of Psychology with a minimum of 50% marks (in annual system) or CGPA 2.5/4.0 (in semester system).
Program Duration: 2 Years (4 Semesters)
Available Specialization
- Clinical Psychology
- Educational Psychology
- Organizational Psychology

ROADMAP

First Year
First Semester

Course Code	Course Title	Credit Hours		
		Total	Theory	Lab
PPY 702	Research Methods	3	3	-
PPY 703	Measurement and Assessment I	3	2	1
	Elective I	3	3	-
	Elective II	3	3	-

Second Semester

Course Code	Course Title	Credit Hours		
		Total	Theory	Lab
PPY 710	Statistical Inferences in Psychology	3	3	-
PPY 711	Measurement and Assessment II	3	2	1
	Elective III	3	3	-
	Elective IV	3	3	-

Summer Semester

Course Code	Course Title	Credit Hours		
		Total	Theory	Lab
PPY 719	Internship I	-	-	-

Second Year
Third Semester

Course Code	Course Title	Credit Hours		
		Total	Theory	Lab
PPY 720	Internship II	6	-	6
THS 701	Thesis	3	3	-

Fourth Semester

Course Code	Course Title	Credit Hours		
		Total	Theory	Lab
PPY 721	Internship III	6	-	6
THS 701	Thesis	3	3	-

Course work = 24 Cr. Hrs
Internship = 12 Cr. Hrs
Thesis = 6 Cr. Hrs
Total = 42 Cr. Hrs

(MPhil Professional Psychology) Electives

Course Code	Course Title	No. of Credit Hours
PPY 704	Classical Approaches to Psychotherapies	3
PPY 707	Neurophysiology	3
PPY 712	Contemporary Approaches to Psychotherapy	3
PPY 715	Pharmacology	3
PPY 612	Cognitive Behavioural Therapy	3
PPY 611	Humanistic & Existentian Therapies	3

Courses (**Educational** Elective **Psychology**) <u>04</u> number of courses shall be chosen as per advice of the supervisor.

Course Code	Course Title	No. of Credit Hours
PPY 705	Theories of Counselling	3
PPY 708	Patterns of Child Rearing and Development of Personality	3
PPY 713	Psychology of Child and Adolescence	3
PPY 716	Analysis and Treatment of Developmental Disabilities	3
PPY 612	Cognitive Behavioural Therapy	3
PPY 611	Humanistic and Existential Therapies	3

Elective Courses (**Organizational Psychology**) <u>04</u> number of courses shall be chosen as per advice of the supervisor.

Course Code	Course Title	No. of Credit Hours
PPY 706	Vocational Guidance and Counselling	3
PPY 709	Personnel Selection and Job analysis	3
PPY 714	Training Theory, Design and Evaluation	3
PPY 717	Organizational Leadership and Marketing	3
PPY 612	Cognitive Behavioural Therapy	3
PPY 611	Humanistic and Existential Therapies	3

PhD PROFESSIONAL PSYCHOLOGY (3 Years)

Campus: IPP
Program Duration: 3 Years (6 Semesters)
Program Timing: Evening

Eligibility Criteria:

- 18 years of education in the relevant field of Psychology including clinical internship and course contents from an HEC recognized university with a minimum CGPA of 3.00/4.00 (Semester System) or 60% marks (Annual System).
- NTS-GAT (Subject) or GRE (Subject) Test passed with minimum 60% marks or BU Admission Test (70% passing marks).
- Initial Research Proposal/Statement of Purpose is required at the time of PhD admission.

ROADMAP

First Year
Semester 1

Course Code	Course Title	Credit Hours		
		Total	Theory	Lab
PPY 801	Advanced Quantitative Research and Research Ethics	3	3	-
PPY 802	Group Psychotherapy I	3	3	-
	Elective I	3	3	-

Semester 2

Course Code	Course Title	Credit Hours		
		Total	Theory	Lab
PPY 810	Advanced Qualitative Research and Research Ethics	3	3	-
PPY 811	Group Psychotherapy II	3	3	-
	Elective II	3	3	-

Summer Semester

Course Code	Course Title	Credit Hours		
		Total	Theory	Lab
PPY 819	Internship I	9	-	9

Second Year
Semester 3

Course Code	Course Title	Credit Hours		
		Total	Theory	Lab
PPY 820	Internship - II	3	-	3
THS 900	Thesis	9	-	9

Semester 4

Course Code	Course Title	Credit Hours		
		Total	Theory	Lab
PPY 821	Internship III	3	-	3
THS 900	Thesis	9	-	9

Third Year
Semester 5

Course Code	Course Title	Credit Hours		
		Total	Theory	Lab
PPY 822	Internship IV	3	-	3
THS 900	Thesis	9	-	9

Semester 6

Course Code	Course Title	Credit Hours		
		Total	Theory	Lab
THS 900	Thesis	9	-	9
PPY 823	Didactic Analysis / Professional Training	3	-	3

Course Work	**= 18 Cr. Hrs**	
Internship	**= 18 Cr. Hrs**	
DA / Professional Training	**= 03 Cr. Hrs**	
Dissertation	**= 36 Cr. Hrs**	
Total	**= 75 Cr. Hrs**	

PhD (Professional Psychology) Electives

Elective Courses **(Clinical Psychology) 02** number of courses shall be chosen as per advice of the supervisor.

Course Code	Course Title	No. of Credit Hours
PPY 803	Psychological Rehabilitation Basic	3
PPY 804	Expressive Art Therapy	3
PPY 805	Hypnotherapy Basic	3
PPY 812	Psychological Rehabilitation Advanced	3
PPY 813	Complementary and Alternative Healing Therapies	3
PPY 814	Hypnotherapy Advanced	3

Elective Courses (**Educational Psychology**) **02** number of courses shall be chosen as per advice of the supervisor.

Course Code	Course Title	No. of Credit Hours
PPY 803	Psychological Rehabilitation Basic	3
PPY 805	Hypnotherapy Basic	3
PPY 806	Vocational Guidance	3
PPY 808	Biological Basis of Behaviour	3
PPY 812	Psychological Rehabilitation Advanced	3
PPY 814	Hypnotherapy Advanced	3
PPY 815	Educational Counselling	3
PPY 817	Psychotherapy with Children and Adolescents	3

Elective Courses **(Organizational Psychology) 02** number of courses shall be chosen as per advice of the supervisor.

Course Code	Course Title	No. of Credit Hours
PPY 803	Psychological Rehabilitation Basic	3
PPY 805	Hypnotherapy Basic	3
PPY 807	Crisis Management Basic	3
PPY 809	Work Team Dynamics	3
PPY 812	Psychological Rehabilitation Advanced	3
PPY 814	Hypnotherapy Advanced	3
PPY 816	Crisis Management Advanced	3
PPY 818	Data Management	3

BAHRIA School of Engineering & Applied Sciences

Department of Computer Engineering

Programs offered:

- Bachelor of Computer Engineering (BCE)
- Master of Computer Engineering (MS-CE)
- PhD (Computer Engineering)

Vision: The Computer Engineering Department is committed to prepare students for professional and research activities with an ability to learn independently, within a diverse multi-cultural environment, and enabling them to become global leaders in their respective fields.

Mission: The mission of Bachelor of Computer Engineering program is to produce ethically sound and technically competent graduates who can fulfill the evolving needs of academia, industry, and society.

Bachelor of Computer Engineering: The Department of Computer Engineering at Bahria University is home to multidisciplinary research and academic units that address issues and recent advances in Computer Engineering. The department provides research areas and cutting-edge facilities in Computer engineering. Our Goal has been, and continues to be, to provide a high degree quality program in Computer and Software Engineering, a program that prepares students for lifelong learning as they take on professional careers in computing.

Eligibility Criteria:
Passed intermediate examination or its equivalent with a minimum of 60% marks in Pre-Engineering Group, or with Mathematics, Physics and Computer Studies.

Regular Program Duration: 4 Years, 8 Semesters

Program Timing: Morning

Scheme of Study for Bachelor of Computer Engineering

Objectives of the Degree Program

Graduates of Computer Engineering Program are expected to achieve the following Program Educational Objectives for BCE program.

PEO 1: Attain an ability to identify and solve challenging problems in their professions by applying theory, principles and modern tools learnt during degree program.
PEO 2: Demonstrate effective communication as an individual or
team player with strong managerial and entrepreneurial skills.
PEO 3: Maintain highest ethical and professional standards in pursuing their careers.
PEO 4: Engage in life-long learning to continually polish their professional capabilities for their personal growth and the betterment of society.

Learning outcome of the Degree Program
The Computer Engineering program prepares students to attain the program educational objectives by ensuring that students demonstrate achievement of the following graduate attributes.
PLO 1: Engineering Knowledge: An ability to apply knowledge of mathematics, computer engineering fundamentals and computer engineering specialization to the solution of complex engineering problems.
PLO 2: Problem Analysis: An ability to identify, formulate, research literature and analyze complex computer engineering problems reaching substantiated conclusions using engineering and natural sciences principles.
PLO 3: Design/Development of Solutions: An ability to design solutions for complex computer engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health & safety, cultural, societal, and environmental considerations.
PLO 4: Investigation: An ability to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis and interpretation of experimental data, and synthesis of information to derive valid conclusions.
PLO 5: Modern Tool Usage: An ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.
PLO 6: The Engineer and Society: An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solution to complex engineering problems.

PLO 7: Environment and Sustainability: An ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
PLO 8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
PLO 9: Individual and Team Work: An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.
PLO 10: Communication: Ability to communicate effectively, orally as well as in writing, on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PLO 11: Project Management: Ability to demonstrate management skills and apply engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.
PLO 12: Lifelong Learning: Ability to recognize importance of, and pursue lifelong learning in the broader context of innovation and technological developments.

ROADMAP

S. No.	Pre-Req.	Course Code	Course Title	Theory Credits Hours	Lab Credit Hours	Total Credit Hours
Semester-I						
1	None	GSC 110	Applied Calculus & Analytical Geometry	3	0	3
2	None	ISL 101 /HSS 116	Islamic Studies / Ethics	2	0	2
3	None	CSC 110	Computing Fundamentals	2	1	3
4	None	GSC 113	Applied Physics	3	1	4
5	None	ENG 105	Functional English	3	0	3
6	None	EEL 112	Workshop Practices	0	1	1
Total:				13	3	16
Semester-II						
1	None	GSC 120	Linear Algebra	2	0	2
2	GSC 113	CEN 121	Circuit Analysis	3	1	4
3	None	CSC 113	Computer Programming	3	1	4
4	None	PAK 103	Pakistan Studies & Global Perspective	2	0	2
5	None	ENV 101	Occupational Health & Safety	1	0	1
6	None	CEN 120	Digital Logic Design	3	1	4
Total:				14	3	17

Semester-III

#	Pre-Req	Course Code	Course Title	Theory	Lab	Total
1	None	CSC 115	Discrete Structures	3	0	3
2	GSC 113	EEN 224	Electronic Devices & Circuits	3	1	4
3	CSC 113	CSC 210	Object Oriented Programming	3	1	4
4	None	HSS 118	Communication Skills	2	0	2
5	GSC 110	GSC 220	Complex Variables & Transforms	3	0	3
6	-	-	Social Science Elective-I	2	0	2
Total:				16	2	18

Semester-IV

#	Pre-Req	Course Code	Course Title	Theory	Lab	Total
1	GSC 110	GSC 210	Differential Equations	3	0	3
2	CSC 210	CSC 221	Data Structures & Algorithms	3	1	4
3	None	EEN 313	Signals & Systems	3	1	4
4	CEN 120	CEN 221	Computer Architecture & Organization	3	1	4
5	-	-	MS-Elective-I	3	0	3
Total:				15	3	18

Semester-V

#	Pre-Req	Course Code	Course Title	Theory	Lab	Total
1	CEN 221	CSC 320	Operating Systems	3	1	4
2	ENG 105	HSS 321	Technical Writing	2	0	2
3	CEN 221	CEN 321	Microprocessors & Interfacing	3	1	4
4	EEN 313	EEN 325	Digital Signal Processing	3	1	4
5	None	CEN 223	Computer Communication & Networks	3	1	4
Total:				14	4	18

Semester-VI

#	Pre-Req	Course Code	Course Title	Theory	Lab	Total
1	-	-	CEDE-I	3	1	4
2	CSC 210	CSC 220	Database Management Systems	3	1	4
3	CSC 221	SEN 220	Software Engineering	3	0	3
4	None	GSC 122	Probability & Statistics	3	0	3
5	-	-	CEDE-II	3	1	4
Total:				15	3	18

Semester-VII

#	Pre-Req	Course Code	Course Title	Theory	Lab	Total
1	CEN 221	CEN 442	Digital System Design	3	1	4
2	None	HSS 423	Entrepreneurship	2	0	2
3	-	-	CEDE-III	3	1	4
4	-	ESC 498	Project-I	0	3	3
5	GSC 120	GSC 321	Numerical Analysis	2	1	3
Total:				10	6	16

Semester-VIII

#	Pre-Req	Course Code	Course Title	Theory	Lab	Total
1	-	ESC 499	Project-II	0	3	3
2	-	-	CEDE-IV	3	1	4
3	-	-	MDEE-I	3	0	3
4	-	-	MDEE-II	3	0	3
5	-	-	Social Science Elective-II	2	0	2
Total:				11	4	15

Multi-Disciplinary Engineering Electives (MDEE) (6 Credit Hours)

Pre-Req	Course Code	Course Title	Theory	Lab	Total Credit Hours
	SEN 320	Human Computer Interaction	3	0	3
	CEN 429	Introduction to Block Chain Technologies	3	0	3
	CSC 449	Neural Networks & Fuzzy Logic	3	0	3
EEN 313	CEN 458	Robotics	2	1	3
	CSC 341	Mobile Application Development	2	1	3
	CEN 426	Introduction to Virtual Reality	3	0	3
	SEN 420	Software Quality Assurance	3	0	3
EEN 224	CEN 457	VLSI Design	2	1	3
	CSC 457	Data Mining & Warehousing	2	1	3
	GEO 437	GIS & Remote Sensing	3	0	3
	GEO 436	Health Safety & Environment	3	0	3
	CEN 427	Biomedical Engineering	3	0	3
	SEN 449	Business Process Automation	3	0	3
	EEN 467	Control Engineering	3	0	3

Computer Engineering Depth Electives (CEDE) (16 Credit Hours)

Pre-Req	Course Code	Course Title	Theory	Lab	Total Credit Hours
CSC 320	CEN 411	Cloud & Distributed Computing	3	1	4
CEN 321	CEN 449	Internet of Things	3	1	4
CEN 321	CEN 440	Embedded System Design	3	1	4
EEN 313	CEN 409	Artificial Intelligence & Machine Learning	3	1	4
CSC 320	CEN 444	Digital Image processing	3	1	4
CSC 113	CEN 408	System & Network Security	3	1	4
CSC 320	CEN 454	System Programming	3	1	4
CSC 320	CEN 407	High Performance Computing	3	1	4
CSC 221	CEN 326	Algorithm Design and Analysis	3	1	4
EEN 325	CEN 425	Hardware Design for DSP & ML	3	1	4

Management Science Electives (MSE - I) (2 Credit Hours)*

Pre-Req	Course Code	Course Title	Theory	Lab	Total Credit Hours
	EMG 222	Principles of Management	2	0	2
	HSS 423	Entrepreneurship	2	0	2

Management Science Electives (MSE - II) (3 Credit Hours)*

Pre-Req	Course Code	Course Title	Theory	Lab	Total Credit Hours
	EMG 201	Engineering Project Management	3	0	3
	MGT423	Engineering Management	3	0	3
	MTM 101	Introduction to Maritime Industry	3	0	3

* MSEE – Total 5 hours

Social Science Electives (SSE) (4 Credit Hours)

Pre-Req	Course Code	Course Title	Theory	Lab	Total Credit Hours
	HSS 412	Engineering Economics	2	0	2
	HSS 413	Sociology for Engineers	2	0	2
	HSS 424	Engineering Ethics	2	0	2
	HSS 541	Organizational Behavior	2	0	2

Master of Science Computer Engineering MS (CE)

Campus: Islamabad
Regular Program Duration: 2 Years 4 Semesters
Program Timing: Evening
Entry Requirements:
16 years' education CGPA > 2.5 Additionally, applicants must provide HEC verification of all academic certificates / degrees.

Objectives of the Degree Program
The objectives of the program are to enhance the student's ability to be successful individual and advance their chosen careers in industry, academia, and public institution, hence making significant contributions to the national growth. In department of Computer Engineering, We are offering specializations in a wide range of related fled like: Computer Vision, Machine Learning, Neural Networks, Advanced Computer Architecture, Wireless and Advanced Network Systems and embedded system etc. To fulfill post graduate research and academic endeavors in this wide range of specializations, the students can also avail the highly competent and top notch faculty from other sister engineering departments of the university.

Semester 1

S.No.	Course Code	Course Title	Credit Hours
1		Core-I	3
2		Core-II	3
3	ESC 701	Research Methodology	3
Total Credit Hours			**9**

Semester 2

S.No.	Course Code	Course Title	Credit Hours
1		Core-III	3
2		Elective -I	3
3		Elective -II	3
Total Credit Hours			**9**

Semester 3

S.No.	Course Code	Course Title	Credit Hours
1		Elective -III	3
2		Elective –IV / Thesis- I	3
Total Credit Hours			**6**

Semester 4

S. No.	Course Code	Course Title	Credit Hours
1		Elective -V	3
2		Elective –VI / Thesis- II	3
Total Credit Hours			**6**

Core Courses

S. No.	Course Code	Course Title	Credit Hours
1	CEN 525	Digital Signal Processing & Applications	3
2	CEN 520	Advanced Computer System Architecture	3
3	CEN 624	Advanced Digital Design	3
Total Credit Hours			**9**

Elective Courses The elective courses for all the four specializations are listed below. The students opting Thesis option have to choose four courses, while the students following Non-Thesis option have to complete six courses. The elective course offered in each semester is on the discretion of the department.

S. No.	Course Code	Course Title	Credit Hours
1	CSC 751	Pattern Recognition	3
2	CSC 764	Computer Vision	3
3	CSC 719	Machine Learning	3
4	CSC 711	Advanced Artificial Intelligence	3
5	CSC 765	Bio Medical Image Analysis	3
6	CEN 745	Advanced Digital Image Processing	3
7	CSC 518	Decision Support Systems	3
8	CEN 740	Advanced Embedded Systems	3
9	CSC 720	Advanced Operating Systems	3
10	CEN 707	Advanced Distributed Systems	3
11	CEN 553	Real Time Computer Systems	3
12	CSC 758	Parallel Processing	3
13	CEN 752	Advanced VLSI System Design	3
14	CEN 541	ASIC and FPGA Design	3
15	CEN 721	Advanced Microprocessor Systems	3
16	CEN 753	Design of Real Time Embedded Systems	3
17	CSC 502	Information Systems	3
18	EET 710	Advanced Computer Networks	3
19	EET 511	Digital Communication Systems	3
20	EET 556	Mobile Communication & Networking	3
21	EET 548	Mobile Cellular Systems and Standards	3
22	EET 554	Wireless Networks	3
23	EET 755	Wireless Communication Techniques	3
24	EET 555	Wireless and Mobile Communications	3
25	EET 702	Advanced Network Security	3
26	EET 553	Information Theory and Coding	3
27	EET 519	Distributed Networking	3
28	EET 520	Network Administration & Management	3
29	EET 706	Advanced Optical Fiber Networks	3
30	EET 711	Advanced Digital Communications	3
31	EET 769	Mobile/Vehicular Ad Hoc Networks	3
32	GSC 700	Advanced Engineering Mathematics	3
33	EEN 510	Stochastic Processes	3
34	CSC 704	Advanced Cryptography	3
35	SEN 762	Advanced Big Data Analytics	3
36	DSC 707	Deep Learning	3
37	CSC 781	Cloud Computing	3
38	ISC 737	Computer and Network Forensics	3
39	SEN 774	IoTs Architecture, Protocols & Applications	3

*These courses may be undertaken for a given specialization

PhD Computer Engineering (3 Years)

Campus: Islamabad
Program Duration: 3 Years (6 Semesters)
Program Timing: Evening

Eligibility Criteria:

18 year of education (MS/MPHIL/equivalent degree) in relevant discipline form an HEC recognized university with a minimum CGPA of 3.00/4.00 (Semester System) or 60% marks (Annual System).

NTS-GAT (Subject) or GRE (Subject) Test passed with minimum 60% marks or BU Admission Test (70% passing marks).

Initial Research Proposal/Statement of Purpose is required at the time of PhD admission.

ROADMAP

Semester 1

Course Code	Subject	Credits
EEN-801	Research Methods in PhD Studies	3
	Elective-I	3
	Elective-II	3
	Total credit hours	9

Semester 2

Course Code	Subject	Credits
	Elective-III	3
	Elective-IV	3
	Elective-V	3
	Total credit hours	9

Semester 3

Course Code	Subject	Credits
EEN-901	Comprehensive Exam	0
EEN-902	Supervised Research (PhD Thesis) including defense and acceptance of research proposal	9
	Total credit hours	9

Semester 4

Course Code	Subject	Credits
EEN-902	Supervised Research (PhD Thesis)	9
	Total credit hours	9

Semester 5

Course Code	Subject	Credits
EEN-902	Supervised Research (PhD Thesis)	9
	Total credit hours	9

Semester 6

Course Code	Subject	Credits
EEN-902	Supervised Research (PhD Thesis)	9
	Total credit hours	9
	Total Credit hours for PhD Program	**54**

List of Elective Courses

S.No	Course Code	Title of Course	Cr. Hrs.
1	CEN-707	Advanced Distributed Systems	3
2	CEN-708	Advanced System Modeling and Simulation	3

3	CEN-720	Advanced Computer Architecture	3
4	CEN-740	Advanced Embedded Systems	3
5	CEN-741	ASIC Design Methodology	3
6	CEN-742	Advanced Digital System Design	3
7	CEN-754	MOS VLSI Circuit Design	3
8	CEN-711	Advanced Artificial Intelligence	3
9	CEN-719	Machine Learning	3
10	CEN-750	Advanced Neural Networks	3
11	CEN-751	Pattern Recognition	3
12	CEN-759	Agent Based Modeling	3
13	CEN-764	Computer Vision	3
14	CEN-765	Bio Medical Image Analysis	3
15	CEN-725	Advanced Digital Signal Processing	3
16	CEN-728	Real Time DSP Design and Applications	3
17	CEN-711	Advanced Digital Communications	3
18	CEN-770	Power Management in Wired and Wireless Systems	3
19	EEP-771	Low Power System Design	3
20	EEP-772	Power Awareness in Distributed Systems	3
21	EEP-773	Power System Stability and Dynamics	3
22	EEP-774	Power System Transients	3
23	EEP-775	HVDC and Flexible AC Transmission	3
24	EEP-776	Rural Electrification and Distributed Generation	3
25	EEP-777	Artificial Intelligence Techniques in Power Systems	3
26	EEP-778	Power System Deregulation	3
27	SEN-723	Formal Methods and Specifications	3
28	SEN-745	Data Ware Housing and Mining	3

29	EEP-778	Power System Deregulation	3
30	SEN-751	Human Aspects in Software Engineering	3
31	SEN-753	Power Aware Computing	3
32	ESC-702	Research Methods in PhD Studies	3
33	ESC-703	Advanced Qualitative Research Methods	3
34	ESC-705	Critical Review of Literature	3
35	GSC-700	Advanced Engineering Mathematics	3
36	GSC-701	Logic and Research	3

Research Themes of Computer Engineering

Computer Engineering programs expose scholars to the complete life-cycle of computer application development including abstraction, modeling and algorithm development and leveraging computer systems.

The potential research themes / areas are as follows:

- Data Mining
- Expert Systems and artificial Intelligence
- Digital Signal Processing & communication
- Multimedia Signal Processing
- Image Processing and Pattern Recognition
- Robotics
- Information & Communication
- Optical and Wireless Communications
- Internet Technologies
- Ad-Hoc and Mobile Communications
- Wireless Sensor Networks
- Concurrent, Distributed and Parallel Computing
- System Modeling and Simulation
- Soft Computing
- Optimization Algorithms
- Embedded Systems
- VLSI & Digital System Design
- Cloud Computing
- Antenna & Electromagnetic
- Bioinformatics

DEPARTMENT OF SOFTWARE ENGINEERING

Bachelor of Software Engineering (BSE)

Programs offered:

- Bachelor of Software Engineering (BSE)
- MS Engineering Management
- Master of Software Engineering (MS-SE)
- PhD (Software Engineering)

Program Educational Objectives

Software Engineering department aims to deliver a strong and coherent Software Engineering program for the development of skilled Software Engineers. The curriculum is in line with PEC and HEC regulations to equip students with latest skills for industry and research activities. Software Engineering graduates should achieve the following educational objectives:

PEO-1: Graduates should demonstrate competence in applying Software Engineering principles & practices in various phases of software/system development life cycle in their respective professional career.

PEO-2: Graduates should demonstrate effective team member or leadership skills with strong managerial skills and a sound sense of social responsibility for the sustainable development of society.

PEO-3: Graduates should demonstrate sustained career development and progression through ethical engineering practices, effective communication skills and continuous learning.

Program Learning Outcomes

PLO 1: Engineering Knowledge: An ability to apply knowledge of computer science, software engineering fundamentals and an engineering specialization to the solution of complex software engineering problems.

PLO 2: Problem Analysis: An ability to identify, formulate, research literature and analyze complex software engineering problems reaching substantiated conclusions using software engineering principles, natural sciences and engineering sciences.

PLO 3: Design/Development of Solutions: An ability to design solutions for complex software engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

PLO 4: Investigation: An ability to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis, and interpretation of experimental data, and synthesis of information to derive valid conclusions.

PLO 5: Modern Tool Usage: An ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.

PLO 6: The Engineer and Society: An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solution to complex engineering problems.

PLO 7: Environment and Sustainability: An ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.

PLO 8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

PLO 9: Individual and Team Work: An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.

PLO 10: Communication: An ability to communicate effectively, orally as well as in writing, on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PLO 11: Project Management: An ability to demonstrate management skills and apply engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.

PLO 12: Lifelong Learning: An ability to recognize importance of, and pursue lifelong learning in the broader context of innovation and technological developments.

Campus: Islamabad & Karachi

Program Timing: Morning

Program Duration: 4 Years (8 Semesters)

Eligibility Criteria:

Passed intermediate examination or its equivalent with a minimum of 60% marks (excluding NCC) in Pre-Engineering Group, or with Mathematics, Physics and Computer Science.

Scheme of Studies	
Duration	4 Years
Number of Semesters	8
Total number of credit hours	134
Non-Engineering Courses	36
Engineering Courses	98

Semester Wise Breakdown of Courses
Semester 1

Semester No.	Serial No.	Course Code	Course Title	Credit Hours	Knowledge Area	Pre- requisite Course
1	1	CSC 110	Computing Fundamentals	2-1-3	Computing and Information Sciences	None
	2	CSC 113	Computer Programming	3-1-4	Computing and Information Sciences	None
	3	GSC 110	Applied Calculus & Analytical Geometry	3-0-3	Natural Sciences (Math)	None
	4	ENG 105	Functional English	3-0-3	Humanities (Language)	None
	5	GSC 114	Applied Physics	2-1-3	Natural Sciences (Physics)	None
			Semester Credit Hrs	**13-3-16**		

Semester 2

Semester No.	Serial No.	Course Code	Course Title	Credit Hours	Knowledge Area	Pre-requisite Courses
2	1	CSC 115	Discrete Structures	3-0-3	Engineering Foundation	None
	2	CSC 210	Object Oriented Programming	3-1-4	Engineering Foundation	Computer Programming (CSC 113)
	3	SEN 120	Introduction to Software Engineering	3-0-3	Core Breadth of Engineering discipline	None
	4	HSS 118	Communication Skills	2-0-2	Humanities (Language)	Functional English (ENG 105)
	5	ISL 101	Islamic Studies/Ethics	2-0-2	Humanities (Culture)	None
	6	GSC 121	Linear Algebra	3-0-3	Natural Sciences (Math)	None
	7	ENV 101	Occupational Health and Safety	1-0-1	Multi-Disciplinary Engineering Courses	None
			Semester Credit Hrs	**17-1-18**		

Semester 3

Semester No.	Serial No.	Course Code	Course Title	Credit Hours	Knowledge Area	Pre-requisite Courses
3	1	CSC 221	Data Structures & Algorithms	3-1-4	Engineering Foundation	Object Oriented Programming (CSC 210)
	2	SEN 211	Software Requirement Engineering	3-0-3	Core Breadth of Engineering discipline	Introduction to Software Engineering (SEN 120)
	3	GSC 122	Probability & Statistics	3-0-3	Natural Sciences (Math)	None

4		Social Science Elective-I	2-0-2	Social Sciences	-
5	CEN 220	Computer Architecture and Logic Design	3-1-4	Engineering Foundation	None
6	PAK 103	Pakistan Studies and Global Perspective	2-0-2	Humanities (Culture)	None
		Semester Credit Hrs	**16-2-18**		

Semester 4

Semester No.	Serial No.	Course Code	Course Title	Credit Hours	Knowledge Area	Pre-requisite Courses
4	1	CSC 320	Operating Systems	3-1-4	Engineering Foundation	Computer Architecture and Logic Design (CEN 220)
	2	CSC 220	Database Management System	3-1-4	Engineering Foundation	Computer Programming (CSC 113)
	3	CSC 321	Design and Analysis of Algorithms	3-0-3	Core Breadth of Engineering discipline	Data Structures & Algorithms (CSC 221)
	4	SEN 221	Software Design & Architecture	2-1-3	Core Breadth of Engineering discipline	Software Requirement Engineering (SEN 211)
	5		Management Science Elective-I	3-0-3	Management Sciences	-
			Semester Credit Hrs	**14-3-17**		

Semester 5

Semester No.	Serial No.	Course Code	Course Title	Credit Hours	Knowledge Area	Pre-requisite Courses
	1	CEN 223	Computer Communication & Networks	3-1-4	Engineering Foundation	-
5	2	SEN 323	Formal Methods in Software Engineering	3-0-3	Engineering Foundation	Applied Calculus & Analytical Geometry (GSC 110)
	3	SEN 311	Software Construction	2-1-3	Core Breadth of Engineering discipline	Software Design & Architecture (SEN 221)
	4		Engineering Elective-I*	3-0-3	Core Depth of Engineering discipline	
	5		MDEE-I	2-1-3	Multi-Disciplinary Engineering Courses	-
	6		Social Science-II	2-0-2	Social Sciences	-
			Semester Credit Hrs	**15-3-18**		

Semester 6

Semester No.	Serial No.	Course Code	Course Title	Credit Hours	Knowledge Area	Pre-requisite Courses
6	1	SEN 321	Software Quality Engineering	3-0-3	Core Breadth of Engineering discipline	Introduction to Software Engineering (SEN 120)
	2	SEN 212	Human Computer Interaction	3-0-3	Core Breadth of Engineering discipline	-
	3	HSS 320	Technical Writing & Presentation Skills	3-0-3	Humanities (Language)	-
	4		Engineering Elective-II*	3-0-3	Core Depth of Engineering discipline	

Semester No.	Serial No.	Course Code	Course Title	Credit Hours	Knowledge Area	Pre-requisite Courses
	5		Engineering Elective-III*	3-0-3	Core Depth of Engineering discipline	
	6	SEN 401	Cloud Computing	2-1-3	Core Breadth of Engineering discipline	-
			Semester Credit Hrs	**17-1-18**		

Semester 7

Semester No.	Serial No.	Course Code	Course Title	Credit Hours	Knowledge Area	Pre-requisite Courses
7	1	ESC 498	Project I	0-3-3	Senior Design Project	-
	2	SEN 410	Software Project Management	3-0-3	Core Breadth of Engineering discipline	Introduction to Software Engineering (SEN 120)
	3	CSC 407	Information Security	3-0-3	Core Breadth of Engineering discipline	-
	4	GSC 321	Numerical Analysis	2-1-3	Natural Sciences (Math)	Applied Calculus & Analytical Geometry (GSC 110)
	5	-	Engineering Elective-IV*	3-0-3	Core Depth of Engineering discipline	-
	6		Management Science Elective-II	2-0-2	Management Sciences	
			Semester Credit Hrs	**13-4-17**		

Semester 8

Semester No.	Sr.No.	Course Code	Course Title	Credit Hours	Knowledge Area	Pre-requisite Courses
8	1	ESC 499	Project II	0-3-3	Senior Design Project	-
	3	-	Engineering Elective-V*	3-0-3	Core Depth of Engineering discipline	-
	4	-	Engineering Elective-VI*	3-0-3	Core Depth of Engineering discipline	-
	5	-	MDEE-II	3-0-3	Multi-Disciplinary Engineering Courses	-
			Semester Credit Hrs	**9-3-12**		

Note: * is either 2-1-3 or 3-0-3 depending on the offered elective course.

Multi-Disciplinary Engineering Elective (MDEE) Courses

This category of courses is related equip students with knowledge related to supporting aspects of Software Engineering ranging from mathematics, natural sciences and engineering. Students are required to select 2 courses (at least 1 lab based) to complete this domain.

Non Pre-req and Pre-req

Course Code	Course Title Total	Credit Hours	Theory	Lab
CEN 122	Digital Design	3	2	1
CSC 448	Introduction to Bio-Informatics	3	3	0
CEN 463	Robotics	3	2	1
CSC 315	Theory of Automata	3	3	0
CEN 439	Embedded System Design	3	2	1
GSC 210	Differential Equations	3	3	0
GSC 220	Complex Variables and Transforms	3	3	0

GSC 445	Operations Research	3	3	0
CEN 450	Simulation and Modeling	3	2	1
GSC 446	Physics-II (Mechanics)	3	3	0
GSC 440	Stochastic Processes	3	3	0
SEN 449	Business Process Automation	3	3	0
CEN 449	System Programming	3	2	1
SEN 429	Fault Tolerant Systems	3	3	0
CEN 453	Real Time Systems	3	3	0
CSC 323	Compiler Construction	3	2	1
CSC 453	Information Theory	3	3	0
SEN 460	IoT Application Development	3	2	1

Engineering Electives Courses
* At least 2 courses with lab components will be offered
This category of comprises of courses that provide in depth knowledge relevant to the areas of Software Engineering and applied computing domains. Students have to take six courses from this category with at least 2 courses comprising of lab components.**The department based on the availability of resources and current market trends will decide course offering.**

1. (With no Pre-req)

Course Code	Course Title Total	Credit Hours	Theory	Lab
SEN 448	Software Applications For Mobile Devices	3	2	1
SEN 324	Software Metrics & Estimation	3	3	0
SEN 450	Design Pattern	3	3	0
SEN 452	Agile Development	3	3	0
CSC 411	Artificial Intelligence	3	2	1
SEN 443	Introduction to Soft Computing	3	2	1
SEN 331	Scientific Computing	3	3	0
SEN 330	Agent Based Computing	3	3	0
SEN 459	Mobile and Pervasive Computing	3	3	0
CEN 451	Data Encryption & Security	3	3	0

CSC 487	Introduction to Data Science	3	2	1
SEN 332	Big Data Analytics	3	3	0
SEN 455	Knowledge Based Management Systems	3	3	0
SEN 453	Information System Audit	3	3	0
CSC 444	Computer Graphics	3	2	1
SEN 329	Digital Animation	3	3	0
SEN 493	Multimedia Systems	3	3	0

2. (With Pre-req)

Course Code	Course Title Total	Credit Hours	Theory	Lab
CSC 313	Visual Programming	3	2	1
CSC 445	Principles of Programming Languages	3	3	0
SEN 328	Game Application Development	3	2	1
SEN 421	Semantic Web	3	2	1
SEN 441	Mathematical Tools For Software Engineering	3	3	0
SEN 456	Usability Engineering	3	3	0
CSC 441	Natural Language Processing	3	3	0
CSC 456	Distributed Computing	3	2	1
CSC 460	Data Mining	3	2	1
CSC 454	Data Warehousing	3	3	0
CSC 458	Management Information Systems	3	3	0
SEN 326	Advanced Database Management Systems	3	2	1
SEN 327	Distributed Database Systems	3	3	0
CEN 445	Digital Image Processing	3	2	1
CSC 464	Computer Vision	3	3	0
SEN 335	Object Oriented Software Engineering	3	2	1
SEN 411	Software Re-Engineering	3	3	0
SEN 310	Web Engineering	3	2	1
SEN 461	Secure Programming	3	2	1

Humanities, Social Sciences & Management Science Electives:
(With no Pre-req)

This category consists of courses that are helpful in building a student's competency beyond the technical education. These courses will help them to understand a broader perspective of society, professional organization and will help them to deal with various management issues. Student will choose 4 courses from this category 2 Social Science and 2 Management Science electives.

1. Humanities and Social Sciences Electives: (With no Pre-req)

Course Code	Course Title Total	Credit Hours
HSS 217	Introduction to Sociology	2
HSS 119	Introduction to International Relations	2
HSS 121	Introduction to Media Studies	2
HSS 218	Introduction to Anthropology	2
HSS 457	Organizational Behavior	2
PSY 102	Introduction to Psychology	2
HSS 219	Sociology for Engineers	2
SEN 442	Software Engineering Economics	2
ENG 123	English Literature	2
HSS 462	Foreign Language	2
HSS 463	Accounting & Finance	2

2. Management Science Electives (With no Pre-req)

Course Code	Course Title Total	Credit Hours
HSS 423	Entrepreneurship	2
MGT 111	Principles of Management	3
HSS 453	Human Resource Management	3
MGT 423	Engineering Management	3
MTM 101	Introduction to Maritime Industry	3

MS –EM

Campuses: Islamabad
Regular Program Duration: 2 Years, 4 Semesters
Available Specialization: None
Program Timing: Evening
Entry Requirements:
1. Bachelor degree or its equivalent in engineering or related scientific field from an accredited institution.
2. Cumulative minimum baccalaureate grade point average of 2.5.
3. Official transcript(s) for all post-secondary coursework.
4. GAT result with at least 50% or more

Additionally, applicants must provide HEC verification of all academic certificates/ degrees.

Program Aims & Objectives:

Engineering management incorporates the leadership skills and concepts from engineering, business, and governance to develop and manage real solutions to complicated, evolving problems. The individuals that work in this field are systems thinkers who view problems and solutions through a holistic lens, striving to create a systems solution that incorporates evolution and adaptation as a key attribute, rather than struggling simply to interface individually engineered components.

This program would aim to:

• Approach each phase of the engineering solution life cycle with the ultimate goal of balancing the risks, needs, and desires of the stakeholders and producing a successful, sustainable system.
• Develop an educational experience that prepares successful leaders for the real world of emerging problems, evolving technologies, and growing complexity in the engineering community.

The proposed program would bear following objectives:

• Emphasizing, developing and applying big-picture thinking to manage critical challenges in the respective engineering and technology discipline.
• Extending benefits to students from various engineering backgrounds by sharing case studies from a wide range of engineering disciplines.

Program Learning Outcomes

The Engineering Management program prepares students to attain the educational objectives by ensuring that students demonstrate achievement of the following student outcomes.

PLO 1: An ability to identify, formulate, analyze, and solve engineering management problems.

PLO 2: An ability to design, implement, and provide management solutions to complex industrial and entrepreneurial concerns.

PLO 3: An ability to use current techniques, technologies, and tools necessary for professional practice.

PLO 4: An ability to design and conduct studies and research appropriate to the discipline, as well as to analyze and interpret data.

PLO 5: An ability to communicate with a range of audiences and function on multidisciplinary teams to accomplish common goals.

PLO 6: An understanding of professional, ethical, legal, security, and societal issues and responsibilities appropriate to the discipline.

Roadmap for MS-EM

The MS-EM program is divided into four semesters. The first semester mainly comprises of core courses, in addition to a university requirement course for the program. In semester two and three, a student is supposed to acquire competency by choosing appropriate elective courses in the area of interest. In the final semester, a student may opt to undertake research work (i.e. thesis) or study elective appropriate courses for his/her area of specialization.

Semester 1

Course code	1 Course Title	Credits
EMG 500	Principles of Engineering Management	3
EMG 501	Finance for Engineers	3
ESC 701	Research Methodology	3
	Total	9

Semester 2

Course code	1 Course Title	Credits
EMG 601	Engineering Project Management	3
EMG 604	Quality Engineering	3
	Elective - 1	3
	Total	9

Semester 3

Course code	1 Course Title	Credits
	Elective - II	3
	Elective - III	3
ESC-600	Thesis 1/ Course Work (Elective - III)	3
	Total	9

Semester 4

Course code	Course Title	Credits
	Elective - IV	3
ESC-600	Thesis 2/ Course Work (Elective Course)	3
	Total	6

Core Courses for MS-EM:

The following are the core courses for MS-EM program:

Code	Course Title	Credit Hours
EMG 500	Principles of Engineering Management	03
EMG 501	Finance for Engineers	03
EMG 601	Engineering Project Management	03
EMG 604	Quality Engineering	03

Following is the university core:

Code	Course Title	Credit Hours
ESC 701	Research Methodology	03

Following is the university core:

Course Code	Course Title	Credit Hours
1. Operations Management		
EMG 602	Business Process Analysis and Development	03
OPM 611	Operations and Production Management	03
SCM 510	Supply Chain Management	03
EMG 605	Forecasting and Decision Making	03
EMG 629	Advanced Operations Research	03
EMG 635	Industrial Psychology	03
2. Energy Management and Urban Planning		
EMG 622	Management in Global Energy Industry	03
EMG 623	Business Policy and Regulations in Global Energy Industry	03
EMG 624	Traffic Engineering	03
EMG 625	Urban and Regional Planning	03
EMG 632	Energy Economics	03
EEP 514	Renewable Energy	03
3. Organizational Management		
HRM 648	Organizational Development	03
EMG 612	Marketing Management for Engineering Concerns	03

Course Code	Course Title	Credit Hours
EMG 613	Advanced Statistical Methods for Engineering Research	03
EMG 615	Human Resource Management and Corporate Social Responsibility	03
EMG 616	Systems Thinking	03
EMG 627	Entrepreneurship for Engineers	03
SCM 513	Engineering Laws and Contract Management	03
MGT 662	Strategic Management	03
FIN 681	Financial Risk Management	03
4. Information, Knowledge and Software Management		
SEN 762	Advanced Big Data Analytics	03
EMG 617	Information Systems Management	03
EMG 618	Enterprise Systems and Audit	03
EMG 619	Information Systems Strategy and Innovation	03
EMG 630	Information Systems Security and Ethics	03
SEN 756	Advanced Usability Engineering	03
EMG 621	Socio-Technical Systems	03
CSC 518	Decision Support Systems	03
SEN 658	Systems Requirement Engineering	03
SEN 621	Advanced Software and System Architecture	03

SEN 523	Automated Software Engineering	03
CSC 746	Advanced Data Mining and Warehousing	03
SEN 647	Advanced Software Project Management	03
5. Technology Management		
EMG 631	Innovation and Technology Management	03
EMG 630	Technology and Entrepreneurship	03
EMG 701	Competitive Strategies in Technology Management	03
EMG 702	Transfer of Technology	03

MS – SE

Campuses: Islamabad, Karachi

Regular Program Duration: 2 Years, 4 Semesters

Available Specialization:

Software Engineering

Program Timing: Evening

Entry requirements:

HEC recognized 4 years Bachelor's Degree or equivalent in a relevant computing discipline (Software Engineering, Computer Science, IT, Computer Engineering, Information Systems & Informatics or equivalent) with a minimum CGPA of 2.5/4.0 or 50% marks where CGPA is not given. The following courses (or equivalent) are pre-requisite for the MS Software Engineering program:

1. Introduction to Software Engineering
2. Object Oriented Programming
3. Data Structure & Algorithms

Students will be required to complete the deficiency courses (as mentioned above) if required. Additionally, applicants must provide HEC verification of all academic degrees and transcripts as per BU rules.

Program Educational Objectives:

1. Prepare graduates who can critically apply concepts, theories and practices to provide creative solutions of complex computing problems.
2. Prepare graduates with a theoretical software engineering background and applied research needed to enter a doctorate program in relevant domains of computing or pursue a research career in Industry.
3. Prepare graduates who are able to join an appropriate and respectable level position in a computing related field and to maintain their professional skills in rapidly evolving field.

Learning Outcomes of the Degree Program:

The MS SE program offers the following learning outcomes by which students are:

1. Able to demonstrate an understanding of advanced knowledge of the practice of software, from vision to analysis, design, validation and deployment
2. Able to tackle complex engineering problems and tasks, using contemporary engineering principles, methodologies, and tools
3. Able to understand research aspects of software engineering and its relevant domain
4. Able to communicate effectively, in both oral and written forms

Road Map

Semester 1

Course code	Subject	Credits
SEN 558	Advanced Requirement Engineering	3
SEN 522	Advanced Software System Architecture	3
ESC 701	Research Methodology	3
	Total credits for 1st semester	9

Semester 2

Course code	Subject	Credits
SEN 547	Software Testing and Quality Assurance	3
	Elective 1	3
	Elective II	3
	Total credits for 2nd Semester	9

Semester 3

Course code	Subject	Credits
	Elective III	3
	Elective Iv	3
ESC-600	Thesis 1/ Course Work (Elective v)	3
	Total credits for 3rd Semester	9

Semester 4

Course code	Subject	Credits
ESC-600	Thesis 11/ Course Work (Elective VI)	3
	Total credits for 4th Semester	3

Total Program Credit Hours: 30

CORE COURSES

S.No	New Course Code	Course Title	Credits
1	SEN 558	Advanced Requirement Engineering	3
2	SEN 522	Advanced Software System Architecture	3
3	SEN 547	Software Testing and Quality Assurance	3
4	ESC 701	Research Methodology	3

General Electives Courses

S.No	New Course Code	Course Title	Credits
1	CSC 720	Advanced Operating Systems	3
2	CSC 753	Distributed Databases	3
3	CSC 764	Computer Vision	3
4	CEN 745	Advanced Digital Image Processing	3
5	CSC 751	Pattern Recognition	3
6	CSC 744	Advanced Computer Graphics	3
7	CEN 707	Advanced Distributed Systems	3
8	CSC 704	Advanced Cryptography	3
9	CSC 711	Advanced Artificial Intelligence	3
10	CSC 741	Advanced Natural Processing	3
11	CSC 750	Advanced Neural Networks	3
12	CSC 765	Bio Medical Image Analysis	3
13	CSC 781	Cloud Computing	3
14	SEN 604	Block chain Technologies	3
15	DSC 707	Deep Learning	3
16	CSC 759	Agent-based Modeling	3
17	CSC-708	Advanced Simulation and Modeling	3
18	CSC-504	Ubiquitous Computing	3
19	CSC-746	Advanced Data Mining	3
20	CSC 760	Advanced Data Warehousing	3
21	CEN 720	Advanced Computer Architecture	3
22	CSC 719	Machine Learning	3
23	CSC 521	Advanced Design & Analysis Algorithm	3
24	GSC 700	Advanced Engineering Mathematics	3
25	EET 702	Advanced Network Security	3

ELECTIVES

S.No	New Course Code	Course Title	Credits
5	SEN 523	Automated Software Engineering	3
6	SEN 546	Software Metrics	3
7	SEN 601	Advanced Software Project Management	3
8	SEN 602	Agile Software Development Methods	3
9	SEN 720	Advanced Human Computer Interaction	3
10	SEN 723	Formal Methods and Specifications	3
11	SEN 754	Advanced Web Computing System and Application	3
12	SEN 755	Service -Oriented Computing	3
13	SEN 756	Advanced usability Engineering	3
14	SEN 758	Component-based Software Engineering	3
15	SEN 759	Software Re-Engineering	3
16	SEN 760	Complex Adaptive Systems	3
17	SEN 762	Advanced Big Data Analytics	3
18	SEN 763	Advanced Software Engineering	3
19	SEN 764	Ontology Engineering	3
20	SEN 774	IoTs Architecture, protocol & applications	3
21	SEN 603	Complex Networks	3

PhD (SE)

Campus: Islamabad, Karachi
Regular Program Duration: 3 Years
Available Specialization: None
Program Timing: Evening
Entry Requirements
"HEC recognized 4 years Bachelor's Degree or equivalent in a relevant computing discipline (Software Engineering, Computer Science, IT, Computer Engineering, Information Systems & Informatics) with a minimum CGPA of 2.5/4.0 or 50% marks where CGPA is not given. Prospective applicants must have taken the following courses in the graduate degree program:
1. Introduction to Software Engineering
2. Object Oriented Programming
3. Data Structure & Algorithms Students will be required to complete the deficiency courses (as mentioned above) if required. Additionally, applicants must provide HEC verification of all academic degrees and transcripts."

Road Map

Semester 1

Course code	Subject	Credits
	Course Work (Student shall study 3 courses)	9
	Total credits for 1st semester	9

Semester 2

Course code	Subject	1 Credits
	Course Work (Student shall study 3 courses)	9
	Total credits for 2nd semester	9

Semester 3		
	Comprehensive exam	0
THS-900	PhD Thesis	9
	Total credits for 3rd semester	9
Semester 4		
THS-900	PhD Thesis	9
	Total credits for 4th semester	9

Semester 5		
THS-900	PhD Thesis	9
	Total credits for 5th semester	9

THS-900	PhD Thesis	9
	Total credits for 6th semester	9
Total credit for PhD program		54

PhD Coursework
1. A PhD scholar will select 6 courses in consultation and approval of supervisor/advisory committee from the following list of courses.
2. Scholar can choose minimum of 3 courses from Category-1 courses and maximum of 3 courses from Category-2 courses. Scholar will also be able to take all 700+ courses from MS Software Engineering program as Category-1 courses.
3. Relevant 700+ courses of MS/PhD programs in Computer
4. Science, Data Science and Information Security will be inclusive in category-1 or 2 based on subject area. Supervisor/Advisory committee will decide about the relevance of such courses for each scholar.
5. It is mandatory to study ESC 701 Research Methodology, if the scholar has not studied this or equivalent course in MS program.

S#	Course Code	Title of Course	Cr. Hrs.
Category-1 Software Engineering & Information Systems			
1	SEN 720	Advanced Human Computer Interaction	3
2	SEN 756	Advanced Usability Engineering	3
3	SEN 723	Formal Methods and Specifications	3
4	SEN 763	Advanced Software Engineering	3
5	SEN 759	Software Re-Engineering	3
6	SEN 758	Component-Based Software Engineering	3
7	SEN 812	Agile Methods	3
8	SEN 815	Verification and Validation	3
9	SEN 813	Advanced Software Requirements Engineering	3
10	SEN 757	Empirical Software Engineering	3
11	SEN 801	Model Driven Software Engineering	3
12	SEN 802	Special Topics in Software Engineering	3
13	SEN 754	Advanced Web Computing System and Application	3
14	SEN 755	Service Oriented Computing	3
15	SEN 816	Middleware For Networked and Distributed Systems	3
16	CSC 781	Cloud Computing	3
17	CEN 707	Advanced Distributed Systems	3
18	SEN 803	Advanced e-Learning Systems	3
19	SEN 761	Advanced Semantic Web	3
20	SEN 764	Ontology Engineering	3
21	SEN 760	Complex Adaptive Systems	3
22	CEN 708	Advanced System Modeling and Simulation	3

25	CSC711	Advanced Artificial Intelligence	3
26	CSC 741	Advanced Natural Language Processing	3
27	CSC-749	Advanced Neural Networks and Fuzzy Logic	3
28	CSC 751	Pattern Recognition	3
29	CSC 746	Advanced Data Mining	3
30	CSC 760	Advanced Data Warehousing	3
31	CSC 801	Advanced Information Retrieval	3
32	CSC 719	Machine Learning	3
33	DSC-703	Data Visualization	3
34	DSC-705	Deep Learning and Data Analysis	3
35	CSC 747	Text Mining	3
36	CSC 764	Computer vision	3
37	CSC 765	Bio Medical Image Analysis	3
38	CSC 701	Computer Supported Cooperative Work	3
39	CEN 745	Advanced Digital Image Processing	3
40	CSC 750	Intelligent Tutoring System	3

Category-2 Computing & Cross Domain Courses

1	ESC 701 *	Research Methodology	3
2	GSC 700	Advanced Engineering Mathematics	3
3	CEN 764	Design of Fault-Tolerant Systems	3
4	SEN 753	Power Aware CoiTiputing	3
5	SEN 814	Ubiquitous Computing and Interaction	3
6	CSC 704	Advanced Cryptography	3
7	CSC 720	Advanced Operating Systems	3
8	CSC 744	Advanced Computer Graphics	3
9	CSC 753	Distributed Databases	3
10	CSC 757	IP Multimedia System	3
11	CSC 758	Parallel Processing	3
12	CEN 720	Advanced Computer Architecture	3
13	CSC 754	Object Oriented Databases	3
14	CSC 755	Web Based DBMS	3
15	CSC 756	Multimedia Databases	3
16	EET710	Advanced Computer Networks	3
17	EET 726	Advanced Internet Technologies	3
18	EET 702	Advanced Network Security	3
19	CEN 740	Advanced Embedded Systems	3
20	CEN 742	Advanced Digital System Design	3
21	EET 850	Wireless Sensor Networks	3
22	EET851	Mobile and ad-hoc Networks	3
23	EEN 725	Advanced Digital Signal Processing	3

*It is mandatory to study ESC 701 Research Methodology, if the scholar has not studied this or equivalent course

DEPARTMENT OF ELECTRICAL ENGINEERING

Programs offered:

- Bachelor of Electrical Engineering (BEE)
- MS (Electrical Engineering)
- PhD (Electrical Engineering)

Electrical engineering is one of the oldest disciplines of engineering. Initially it was confined to few areas such as power generation, transmission and distribution, radio communication and wireless telephony. However, in the last half of the century it has seen tremendous growth and expansion. The diversification and expansion in some areas of Electrical Engineering has been of such a large magnitude that they seem to be independent disciplines in their own. However, in a large part of the world electrical engineering is still considered to be the parent discipline. This curriculum has been developed on this rationale. It facilitates the teaching of common core courses and selection of courses of a particular area depending upon the need and availability of the resources.

Bachelor of Electrical Engineering

Objectives of the Degree Program

PEO 1: To exhibit the expertise in the field of electrical engineering to compete with technical challenges and find the solutions of complex engineering problems.

PEO 2: To be skillful employable graduates in different domains of design, development, operation and maintenance, as well as explore opportunities for entrepreneurship.

PEO 3: To pursue professional growth by taking up higher studies, ascertain technologies, develop proficiency in the usage of newtools.

PEO 4: To work in multicultural environment and communities, providing leadership in their domain, and responsive to ethical, moral, and societal issues.

Learning outcome of the Degree Program

Engineering Knowledge: An ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

Problem Analysis: An ability to identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

Design/Development of Solutions: An ability to design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

Investigation: An ability to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis and interpretation of experimental data and synthesis of information to derive valid conclusions.

Modern Tool Usage: An ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.

The Engineer and Society: An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solution to complex engineering problems.

Environment and Sustainability: An ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of, and need for, sustainable development.

Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

Individual and Team Work: An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.

Communication: An ability to communicate effectively, orally as well as in writing, on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

Project Management: An ability to demonstrate management skills and apply engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.

Lifelong Learning: An ability to recognize the need for, and have the preparation and ability to engage in, independent and life-long learning in the broadest context of technological change.

Bachelor of Electrical Engineering
Scheme of Studies

Campus	Islamabad/Karachi
Department	Department of Electrical Engineering
Program title	BEE
Program level	Bachelors
Total duration of program	4 years
Total number of semesters	8 Semesters
Total number of credit hours	136
Number of credit hours per semester	16-18
Engineering courses	28 Courses, 95 Cr hrs., 69.9 % of total
Non-Engineering courses	15 Courses, 41 Cr hrs., 30.1 % of total

Courses of Non-Engineering Domain

Knowledge Area	Sub Area	Name of Course	Lec. Cr. Hrs	Lab Cr. Hrs	Total Cr. Hrs.	Total Courses	Total Credits	% Area	% Overall
Humanities and Social Sciences	English	Functional English	2	0	2	3	7	17	5.1
		Comm. Skills	2	0	2				
		Technical Report Writing & Present. Skills	3	0	3				
	Culture	Islamic Studies/ Ethics	2	0	2	2	4	9.7	2.9
		Pakistan Studies	2	0	2				
	Social Sciences	Social Sciences Elective 1	3	0	3	2	6	14.6	4.4
		Social Sciences Elective 2	3	0	3				
Management Sciences		Management Sciences Elective 1	2	0	2	2	5	12.2	3.7
		Management Sciences Elective 2	3	0	3				
Natural Sciences	Math	Calculus and Analytical Geometry	3	0	3	4	12	29.2	8.8
		Linear Algebra	3	0	3				
		Differential Equations	3	0	3				
		Complex Variable and Transform	3	0	3				
	Physics	Applied Physics	3	1	4	1	4	9.8	2.9

Electives	Elective 1*	3	0	3	1	3	7.3	2.2
Total		40	1	41	15	41	100%	30.1%

Courses of Engineering Domain

Knowledge Area	Name of Course	Lec. Cr. Hrs.	Lab Cr. Hrs.	Total Cr. Hrs.	Total Cou-rses	Total Cr. Hrs.	% Area	% Overall
Computing	Introduction to Computing	1	1	2	3	9	9.5	6.6
	Programming Fundamentals	2	1	3				
	Computing Elective	3	1	4				
Electrical Engineering Foundation	Linear Circuit Analysis	3	1	4	9	28	29.5	20.6
	Electrical Network Analysis	3	1	4				
	Workshop Practice	0	1	1				
	Signals and Systems	3	1	4				
	Electronic Devices & Circuits	3	1	4				
	Digital Logic Design	3	1	4				
	Electromagnetic field theory	3	0	3				
	Probability Methods in Engineering	3	0	3				
	Engineering Drawing	0	1	1				
Electrical Engineering Core (Breadth)	Communication Systems	3	1	4	7	28	29.5	20.6
	Embedded system design	3	1	4				
	Electrical Machines	3	1	4				
	Linear Control Systems	3	1	4				
	Electronic Circuit Design	3	1	4				
	Breadth Core 1	3	1	4				
	Breadth Core 2	3	1	4				
Electrical Engineering Core (Depth)	Depth Elective 1	3	1	4	5	19	20	13.9
	Depth Elective 2	3	1	4				
	Depth Elective 3	3	1	4				
	Depth Elective 4	3	1	4				
	Depth Elective 5	3	0	3				
IDEE	IDEE-1	2	0	2	2	5	5.2	3.8
	IDEE-2	3	0	3				
Senior Design Project	Senior Design Project 1	0	3	3	2	6	6.3	4.4
	Senior Design Project 2	0	3	3				
Internship (Summer)		0	0	0	0	0	0	0
Total					28	95	100	69.9%

Semester-1

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	None	GSC 110	Applied Calculus and Analytical Geometry	3+0	3	0
2	None	CSC 111	Introduction to Computing	1+1	1	1
3	None	ENG 104	Functional English	2+0	2	0
4	None	ISL 101	Islamic Studies/ Ethics	2+0	2	0
5	None	XXXX	IDEE-1	2+0	2	0
6	None	GSC 113	Applied Physics	3+1	3	1
7	None	EEL 112	Workshop Practice	0+1	0	1
Total Credit Hours in Semester-1				16	13	3

Semester-2

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	None	EEL 121	Engineering Drawing & CAD	0+1	0	1
2	GSC 110	GSC 210	Differential Equations	3+0	3	0
3	CSC 111	CSC 112	Programming Fundamentals	2+1	2	1
4	None	EEN 110	Linear Circuit Analysis	3+1	3	1
5	None	CEN 120	Digital Logic Design	3+1	3	1
6	None	PAK 101	Pakistan Studies	2+0	2	0
Total Credit Hours in Semester-2				17	13	4

Semester-3

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	None	HSS 118	Communication Skills	2+0	2	0
2	EEN 110	EEN 224	Electronic Devices and Circuits	3+1	3	1
3	EEN 110	EEN 211	Electrical Network Analysis	3+1	3	1
4	CSC 112	CSC XXX	Computing Elective	3+1	3	1
5	GSC 110	GSC 220	Complex Variables and Transforms	3+0	3	0
Total Credit Hours in Semester-3				17	14	3

Semester-4

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	None	GSC 121	Linear algebra	3+0	3	0
2	None	HSS XXX	Humanities & Social Sciences Elective -1	3+0	3	0
3	None	EEN 313	Signals and Systems	3+1	3	1
4	EEN 224	EEN 225	Electronic Circuit Design	3+1	3	1
5	GSC 110	EEN 226	Probability Methods in Engineering	3+0	3	0
Total Credit Hours in Semester-4				17	15	2

Semester-5

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	GSC 110	EEN 311	Electromagnetic Field Theory	3+0	3	0
2	CEN 120	CEN 440	Embedded systems Design	3+1	3	1
3	XXXX	XXXX	Natural Science Elective	3+0/2+1	3/2	0/1
4	EEN 313	EET 321	Communication Systems	3+1	3	1
5	EEN 211	EEN 312	Electrical Machines	3+1	3	1
Total Credit Hours in Semester-5				18	15/14	3/4

Semester-6

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	XXXX	EEXXX	Breadth Core- 1	3+1	3	1
2	EEN 313	EEN 412	Linear Control Systems	3+1	3	1
3	None	MGTXXX/ HSS XXX	Management Science Elective 1	2+0	2	0
4	XXXX	EEXXXX	Depth Elective 1	3+1	3	1
5	XXXX	EEXXXX	Breadth Core-2	3+1	3	1
Total Credit Hours in Semester-6				18	14	4

Semester-7

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	None	ESC 498	Project – 1	0+3	0	3
2	None	HSS 320	Tech. Writing & Presentation Skills	3+0	3	0
3	XXXX	EEXXX	Depth Elective 2	3+1	3	1
4	XXXX	EEXXX	Depth Elective 3	3+1	3	1
5	XXXX	XXXX	IDEE-2	3+0	3	0
Total Credit Hours in Semester-7				17	12	5

Semester-8

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	XXXX	ESC 499	Project-2	0+3	0	3
2	None	HSSXXX	Humanities & SS Elective-2	3+0	3	0
3	None	HSSXXX	Management sciences Elective - 2	3+0	3	0
4	XXXX	EEXXXX	Depth Elective 4	3+1	3	1
5	XXXX	EEXXXX	Depth Elective 5	3+0	3	0
Total Credit Hours in Semester-8				16	12	4

List of Elective Courses
Non-Engineering Domain Electives

A. Humanities and Social Sciences Electives

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	None	HSS 422	Engineering Ethics	3+0	3	0
2	None	HSS 202	Introduction to Sociology	3+0	3	0
3	None	BES 103	Critical Thinking	3+0	3	0
4	None	HSS 456	Organizational Behavior	3+0	3	0
5	None	PSY 401	Professional Psychology	3+0	3	0
6	None	HSS 111	Introduction to International Relations	3+0	3	0

B. Management Science Electives

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	None	HSS 423	Entrepreneurship	2+0	2	0
2	None	MGT 421	Leadership	2+0	2	0
3	None	MGT 422	Personal Grooming	2+0	2	0
4	None	MGT 111	Principles of Management	3+0	3	0
5	None	MGT 423	Engineering Management	3+0	3	0
6	None	MGT 424	Engineering Economics	3+0	3	0
7	None	MGT 425	Project Management in Engineering	3+0	3	0

C. Natural Sciences Electives

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	GSC 110	GSC 211	Multivariable Calculus	3+0	3	0
2	GSC 210	GSC 320	Numerical Analysis	3+0	3	0
3	None	GSC 221	Discrete Mathematics	3+0	3	0
4	None	GSC 340	Chemistry	2+1	2	1

Engineering Domain Electives

A. Computing Electives

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	CSC 112	CSC 210	Object Oriented Programming	3+1	3	1
2	CSC 112	CSC 221	Data structure and Algorithm	3+1	3	1

B. Breadth Core Electives

1. Power Engineering

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	EEN 211	EEP 331	Power System Analysis Breadth Core 1	3+1	3	1
2	EEN 219	EEN 433	Power Distribution and Utilization Breadth Core 2	3+1	3	1

2. Electronics Engineering

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	EEN 224	EEP 468	Power Electronics Breadth Core 1	3+1	3	1

| 2 | EEN 313 | EEN 325 | Digital Signal Processing Breadth Core 2 | 3+1 | 3 | 1 |

3. Telecommunication Engineering

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	None	CEN 223	Computer Communication & Networks Breadth Core 1	3+1	3	1
2	EEN 313	EEN 325	Digital Signal Processing Breadth Core 2	3+1	3	1

C. Breadth Core Electives

1. Telecommunication Engineering

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	EEN 311	EEN 431	RF and Microwave Engineering	3+1	3	1
2	None	EET 463	Optical Fiber Communication	3+1	3	1
3	EEN 311	EET 447	Navigation and Radar Systems	3+1	3	1
4	EET 321	EEN 436	Wireless and Mobile Communication	3+1	3	1
5	EET 321	EET 449	Satellite Communications	3+1	3	1
6	EEN 311	EET 451	Wave Propagation and Antennas	3+1	3	1
7	CEN 223	EET 452	Multimedia Communications	3+1	3	1

8	None	CSC 453	Information Theory	3+1	3	1
9	CEN223	EEN 434	Computer Networks	3+1	3	1
10	EET 321	EET 411	Digital Communications	3+1	3	1
11	None	EET 456	Telecom Transmission and Switching Systems	3+0	3	0
12	EEN 313	CEN 444	Digital Image Processing	3+0	3	0
13	CEN 120	CEN 441	FPGA- Based System Design	3+1	3	1
14	EEN 224	EEN 469	Linear Integrated Circuits and Applications	3+1	3	1
15	EEN 224	EEN 316	Instrumentation and measurement	3+1	3	1
16	None	EET 471	Emerging Wireless Technologies and RF planning	3+0	3	0
17	None	EET 472	Telecommunication policies and standards	3+0	3	0
18	None	EET 462	Cryptography and Network Security	3+0	3	0
19	None	EET 459	Introduction to Block chain	3+0	3	0
20	CEN 222	ITC 411	Cyber Security	3+0	3	0

2. Electronics Engineering

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	EEN 224	EEN 316	Instrumentation and measurement	3+1	3	1
2	EEN 224	EEN 462	Integrated Electronics	3+1	3	1
3	None	EEN 441	Industrial Process Control	3+1	3	1
4	EEN 224	EEN 442	Digital Electronics	3+1	3	1
5	EEN 224	EEN 444	Opto Electronics	3+1	3	1
6	EEN 224	CEN 452	VLSI Design	3+1	3	1
7	EEN 224	EEN 445	Industrial Electronics	3+1	3	1
8	CEN 120	CEN 442	Digital System Design	3+1	3	1
9	EEN 224	EEN 469	Linear Integrated Circuits & Applications	3+1	3	1
10	EEN 224	EEN 466	Introduction to Nano Technology	3+0	3	0
11	EEN 311	EET 451	Wave Propagation and Antennas	3+1	3	1
12	EEN 313	CEN 444	Digital Image Processing	3+0	3	0
13	EEN 224	EEN 435	Solid State Devices	3+1	3	1
14	EEN 412	EEN 437	Digital Control Systems	3+1	3	1
15	EEN 219	EEN 433	Power Distribution and Utilization	3+1	3	1
16	CEN 120	CEN 441	FPGA- Based System Design	3+1	3	1
17	EEN 312	EEN 420	Industrial Automation	3+1	3	1
18	EEN 224	EEN 471	Microelectronics Technology	3+1	3	1
19	EEN 311	EEN 431	RF and Microwave Engineering	3+1	3	1
20	EEN 325	ESC 471	Biomedical Instrumentation	3+1	3	1
21	None	CEN 223	Computer Communication & Networking	3+1	3	1
22	None	ESC 472	Medical Robots	3+0	3	0
23	CSC 411	CEN 458	Robotics	3+1	3	1

3. Power Engineering

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	EEN 224	EEN 316	Instrumentation and Measurements	3+1	3	1
2	EEN 219	EEP 441	Advanced Electrical Machines	3+1	3	1
3	EEN 219	EEP 442	Power Generation	3+1	3	1
4	EEN 433	EEP 443	Electrical Power Transmission	3+1	3	1
5	EEN 224	EEP 468	Power Electronics	3+1	3	1
6	EEP 331	EEP 444	Power System Protection	3+1	3	1
7	EEP 331	EEP 445	Power System Stability & Control	3+0	3	0
8	EEN 219	EEP 471	Electrical Machine Design and Maintenance	3+1	3	1
9	EEN 211	EEP 446	High Voltage Engineering	3+1	3	1
10		EEP 448	Renewable Energy Systems	3+0	3	0
11	EEN 313	EEN 325	Digital Signal Processing	3+1	3	1
12	EEN 224	EEP 472	Industrial Drives	3+1	3	1
13	EEP 331	EEP 475	FACTS and HVDC Transmission	3+1	3	1
14	None	CEN 223	Computer Communication & Networking	3+1	3	1
15	None	EEP 474	Smart Grid	3+0	3	0
16	EEN 412	EEN 437	Digital Control System	3+1	3	1
17	EET 321	EET 474	Digital Communication System	3+1	3	1
18	EEN 224	EEN 469	Linear Integrated Circuits and Applications	3+1	3	1
19	EEN 224	EEP 474	PLC and Industrial Drives	3+1	3	1
20	EEN 224	EEN 445	Industrial Electronics	3+1	3	1
21	None	EEP 331	Power System Analysis	3+0	3	0
22	None	EEN 434	Computer Networks	3+1	3	1

D. IDEE Electives

Sr. No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	None	ESC 111	Basic Mechanical Engineering	2+0	2	0
2	None	GSC 104	Surveying and Leveling	2+0	2	0
3	None	GSC 486	Geographical Information System	2+0	2	0
4	None	ENV 440	Energy and Environment	2+0	2	0
5	None	EEA 430	Introduction to Mechatronics	3+0	3	0
6	None	EEN 438	Introduction to Biomedical Engineering	3+0	3	0
7	None	CSC 320	Operating Systems	3+0	3	0
8	None	CSC 419	Introduction to Machine Learning	3+0	3	0
9	None	CSC 488	Big Data Analytics	3+0	3	0
10	None	CSC 410	Introduction to Cloud Computing	3+0	3	0
11	None	CSC 412	Artificial Intelligence	3+0	3	0
12	None	EET 461	Industrial Internet Of Things (IIoTs)	3+0	3	0

MS EE

Campus: Islamabad & Karachi
Regular Programme Duration: 2 Years (4 Semesters)
Available Specialization:
Power System, Automation & Control, Communication Systems and IoT Networks (Islamabad/Karachi Campus)
Program Timing: Evening (Islamabad/Karachi Campus), Weekend (Karachi Campus)
Eligibility Criteria:
Four Year Degree in Electrical/Electronic/Computer or Allied Discipline with minimum CGPA 2.5/4.0 or 50% marks. Students will be required to complete deficiency in earned credit hours.
Graduates from other engineering disciplines or 16-year degree in Computer Science, Electronics, Physics or any related discipline may be eligible for this program, subject to passing the prerequisite courses with minimum GPA 3.0 of 4.0 in each course, as recommended by the departmental graduate committee at admission time.

ROADMAP

Semester - I		
i.	ESC 501	Core – I Research Methodology (University Requirement)
ii.		Core – II
		Core – III
Semester-II		
i.		Core-IV
ii.		Core-V
iii.		Elective-I
Semester-III		
i.		Elective-II
ii.		Thesis-I/ Elective-IV
Semester-IV		
i.		Elective-III
ii.		Thesis-II/ Elective-V

Core Courses
MS EE (Automation and Control)

Course Code	Core Course Title	Credit Hours
ESC 501	Research Methodology	3
EEN 510	Stochastic Process	3
EET 724	Optimization Techniques in Electrical Engineering	3
EEA 600	Artificial Intelligence for Control Systems	3
EEN 726	Modern Control Theory	3

Elective Courses

Course Code	Elective Course Title	Credit Hours
EEA 713	Robust Multivariable Control System	3
EEA 703	Dynamic Modeling system	3
EEA 749	Fuzzy Logic and Intelligent Control Systems	3
EEA 509	Nonlinear Control Systems	3
EEA 704	Adaptive Control Systems	3
CEN 758	Robotics and Intelligent Sensors	3
CEN 722	Advanced Interfacing Techniques	3
EEA 540	Mechatronics	3
EEN 506	Advanced Solid State Devices	3
EEA 601	Industrial Automation Technologies	3
EEA 602	System Integration	3
EEA 715	Industrial Project Management	3
EEA 716	Control Instrumentation and Robotics	3
EEA 717	Process Control Commissioning and Production Management	3

MS EE (Power Systems)

Course Code	Core Course Title	Credit Hours
ESC 501	Research Methodology	3
EEN 510	Stochastic Process	3
EET 724	Optimization Techniques in Electrical Engineering	3
EEP 558	Power Transmission and Distribution	3

EEP 559	Power Generation and Plant Operation	3

Elective Courses

Course Code	Elective Course Title	Credit Hours
EEP 716	Advanced Power System Analysis	3
EEP 717	Advanced Power System Planning	3
EEP 718	Advanced Power System Protection	3
EEP 561	High Voltage Engineering Design	3
EEP 754	Smart Grid System Operation	3
EEP 521	Design of Electrical Machines	3
EEP 564	Hydel Power Generation	3
EEP 565	Integration of Distributed Generation	3
EEP 566	Power System Reliability	3
EEP 719	Advanced Topics in Power Systems Engineering	3
EEP 514	Renewable Energy	3
EEP 757	Non-Conventional Energy Systems	3
EEP 516	Solar Power Generation	3
EEP 517	Wind Power Generation	3
EEP 519	Hybrid Power Systems	3
EEP 714	Advanced Topics in Renewable Energy	3
EEP 723	Thermal and Nuclear Power Generation	3
EEP 720	Computer Methods in Power Systems	3
EEP 721	Insulation Co-ordination in Power Systems	3
EEP 712	Advanced Power Electronics	3
EEP 502	Advanced Power System Operation and Control	3
EEP 780	EMS & SCADA	3
EEA 713	Robust Multivariable Control System	3
EEA 749	Fuzzy Logic and Intelligent Control Systems	3
EEA 509	Nonlinear Control Systems	3

MS EE (Communication Systems & IoT Networks)
Core Courses

Course Code	Core Course Title	Credit Hours
ESC 501	Research Methodology	3
EEN 510	Stochastic Process	3
EET 724	Optimization Techniques in Electrical Engineering	3
EEN 712	Advanced Digital Communication Systems	3
EET 603	Communication Technologies & Platforms for IoT	3

Elective Courses

Course Code	Elective Course Title	Credit Hours
EET 729	Wireless Sensor Networks	3
EET 762	Communication Network Architecture and Protocols	3
EET 766	RF System Engineering and Design	3
EET 750	Antennas Theory, Design and Applications	3
EET 768	Cognitive & software Defined Radio	3
EET 755	Wireless Communication Techniques	3
EEN 740	Embedded System Design for Telecommunications	3
EET 756	Telecommunication Switching Systems	3
EET 702	Advanced Network Security	3
CEN 745	Advanced Digital Image Processing	3
ESC 716	Advanced Topics in Wireless & Networking	3
EEN 725	Advanced Digital Signal Processing	3
EET 560	Telecommunication Network Management	3
EET 555	Wireless & Mobile Communications	3
EET 552	Multimedia Networking	3
EET 553	Information Theory and Coding	3
EET 546	Radio & Microwave Engineering	3
EET 555	Wireless & Mobile Communications	3
EET 558	5G And Internet of Things	3

EET 559	Programming of Internet of Things	3
EET 601	Narrow Band IoT Systems	3
EET 731	IoT for Industry 4.0	3
EET 730	AI for Internet of Things	3
EET 603	SDN for Internet of Things	3
EET 728	Security for Internet of Things	3
EET 602	Ultra-Low Power Radios for IoT	3

PhD – EE

Campus: Islamabad & Karachi
Regular Program Duration: 3 Years (6 Semesters)
Available Specialization:
Electrical Engineering related field of studies
Program Timing: Evening
Entry Requirements:
- 18 Years Education (MS/MPhil/equivalent) in the relevant discipline from an HEC recognized university with minimum CGPA 3.0/4.0 (Semester System) or 60% marks (Annual System).
- NTS-GAT (Subject) or GRE (Subject) Test passed with minimum 60% marks or BU Admission Test (70% passing marks).
- Initial Research Proposal/Statement of Purpose is required at the time of PhD admission.

ROADMAP

Semester - I

Course code	Subject	Credits
	Course Work (Student shall study 3 courses)	9
	Total Credits for 1st Semester	9
SEMESTER II		
	Course Work (Student shall study 3 courses)	9
	Total Credits for 2nd Semester	9
SEMESTER III		
	Comprehensive exam	O
	PHD Thesis	9
	Total Credits for 3rd Semester	9

SEMESTER IV		
	PHD Thesis	9
	Total Credits for 4th Semester	9
SEMESTER V		
	PHD Thesis	9
	Total Credits for 5th Semester	9
SEMESTER VI		
	PHD Thesis	9
	Total Credits for 6th Semester	9
	Total credit for PHD program	54

Core Courses

Student shall register at least 3 courses from the list of Electrical Engineering courses. EE courses offered in MS programs at Bahria University with course code 7XX shall be considered as part of Electrical Engineering courses for PhD (EE). Student can take 700+ courses from MS CS/EE/SE/Data Science and IS programs. Supervisor/Advisory committee will decide about the relevance of such courses for each scholar.

Course Code	Title of Course	Cr. Hrs.
EET 762	Communication Networks Arch and Protocols	3
EET 766	RF System Engineering and Design	3
EET 750	Antenna Theory, Design and Applications	3
EET 755	Wireless Communication Techniques	3
EET 756	Telecommunication Switching Systems	3
EET 706	Advanced Obtical Fibre Networks	3
ET 725	Advanced Routing and Switching	3
EET 726	Advanced Internet Technologies	3
EET 723	Optimization Techniques	3
EET 713	Advanced Network Design	3
EET 757	Mobile Computing	3
EET 702	Advanced Network Security	3

EET 850	Wireless Sensor Networks	3
EET 851	Mobile and ad-hoc Networks	3
EET 727	Cognitive Cooperative Networks	3
EET 711	Advanced Digital Communications	3
EET 768	Cognitive and Software Defined Radio	3
EEN 725	Advanced Digital Signal Processing	3
EEN 824	On-Chip Interconnection Networks	3
EEN 740	Embedded System Design for Telecommunications	3
EEN 825	Optimal sampled – Data Control Systems	3
EEN 826	Networked Dynamic Systems	3
EEN 725	Advanced Digital Signal Processing	3
EEN 728	Real Time DSP Design and Applications	3
EEN712	Advanced Digital Communication Systems	3
EEN 827	Modern Control Theory	3
EEN 828	Advanced Nonlinear Control Systems	3
EEP 770	Power Management in Wired and Wireless Systems	3
EEP 716	Advanced Power Electronics	3
EEP 771	Low Power System Design	3
EEP 772	Power Awareness in Distributed Systems	3
EEP 773	Power System Stability and Dynamics	3
EEP 774	Power System Transients	3
EEP 775	HVDC and Flexible AC Transmission	3
EEP 776	Rural Electrification and Distributed Generation	3
EEP 777	Artificial Intelligence Techniques in Power Systems	3
EEP 778	Power System Deregulation	3
EEP 757	Non-conventional Energy System	3
EEP 723	Thermal and Nuclear Power Generation	3
EEP 714	Advance d Topics in Renewable Energy	3
EEP 719	Advanced Topics in Power System Engineering	3

EEP 720	Computer Methods in Power System	3
SEN 723	Formal Methods and Specifications	3
SEN 753	Power Aware Computing	3
SEN 755	Service Oriented Computing	3
CEN 707	Advanced Distributed Systems	3
CEN 708	Advanced System Modeling and Simulation	3
CEN 745	Advanced Digital Image Processing	3
CEN 720	Advanced Computer Architecture	3
CEN 740	Advanced Embedded System	3
CEN 741	ASIC Design Methodology	3
CEN 742	Advanced Digital System Design	3
CEN 754	MOS VLSI Circuit Design	3
CSC 719	Machine Learning	3
CSC 750	Advanced Neural Networks	3
CSC 759	Agent Based Modeling	3
ESC 703	Advanced Qualitative Research Methods	3
ESC 704	Advanced Quantitative Research Methods	3
ESC716	Advanced Topics in Wireless &Networking	3
ESC 701*	Research Methodology	3

*It is mandatory to study ESC 701 Research Methodology, if the scholar has not studied this or equivalent course in MS program.

Allied Engineering Courses

Students can study maximum two allied/interdisciplinary courses during their PhD (EE) program.

The choice of allied courses is not limited to the following list and based on PhD Supervisor's recommendation requisite PhD course(s) from SE, CE and CS department can be registered.

ESC 705	Critical Review of Literature	3
GSC 701	Logic and Research	3
CSC 704	Advanced Cryptography	3
CSC 711	Advanced Artificial Intelligence	3
GSC 700	Advanced Engineering Mathematics	3
CEN 708	Advanced System Modelling and Simulation	3
SEN 754	Bio Medical Image Analysis	3
CSC 751	Pattern Recognition	3
CSC 764	Computer Vision	3
SEN 745	Data Ware Housing and Mining	3
SEN 751	Human Aspects in Software Engineering	3
SEN 754	Advanced Web Computing System and Application	3

Research Themes of Electrical Engineering

The EE program provides the graduates with the broad as well as in-depth technical education necessary for productive employment in the public or private sector. It aims at development of understanding of advanced issues important for current and future needs of the region. Quality research aims to encompass a broad area covering advanced digital and analogue electronics, communication, signal processing, multimedia, computer vision, advanced controls for robotics and microelectronics/nano-electronics.

The potential research themes / areas are as follows:

Control, Intelligent Systems and Robotics	Renewable Power Generation
Communications & Networking	Communication
Cyber-Physical Systems and Design Automation	Electromagnetics and Photonics
Design, Modeling and Analysis	High Voltage Engineering
Integrated Circuits	Image Processing, Multimedia and Biomedical Imaging
Micro/Nano Electro Mechanical Systems	Nano Devices and Integrated Systems
Physical Electronics	Power Electronics
Signal Processing	Power Systems
Power Generation, Transmission and Distribution	Systems Science and Signal Processing
Smart Grids Technologies	System engineering
	Electricity Market in Smart Grid
	Electrical Machines
	Instrumentation Engineering

DEPARTMENT OF EARTH & ENVIRONMENTAL SCIENCES

Programs offered:

- BS (Environmental Sciences)
- BS (Geology)
- BS (Geo Physics)
- BS (Geo Sciences)
- MS (Environmental Sciences)
- MS (Geology)
- MS (Geo Physics)
- PhD (Environmental Sciences)
- PhD (Geology)
- PhD (Geo Physics)

BS – Environmental Sciences (4 Years)

Campus: Islamabad & Karachi
Program Duration: 4 Years (8 Semesters)
Programme Timing: Morning
Entry Requirements:

F.Sc (Pre-Engg/Pre-Medical/ A level, ICS, Engg. Diploma or equivalent) with 50% marks.

ROADMAP

Semester 1

Course code	Course Title	Credit Hours
PAK 101	Pakistan Studies	2
ISL 101	Islamic Studies	2
ENG 103	English I	3
CSC 105	Introduction to Computers	3
PHY 101	Physics	3
GEO 105	Physical & General Geology	3
MAT 105* OR BIO 105*	Fundamentals of Biology	
	Fundamentals of Mathematics	
	Total Credit Hours	**16**

*Academic credit of this course is zero but its contact hours, teaching material and tuition fee are equal to a 3 credit hours course.

Semester 2

Course code	Course Title	Credit Hours
CHM 105	Chemistry	3
ENG 104	English -II	3
MAT 115	Calculus & Analytical Geometry	3
GEO 110	Fundamental of Geography & Geomorphology	3
ENV 105	Introduction to Environmental Sciences	3
ENV 110	Environmental Biology	3
	Total Credit Hours	**18**

Semester 3

Course code	Course Title	Credit Hours
ENG 232	Oral Communication	3
MAT 205	Statistics	3
ENV 210	Environmental Chemistry	3
ENV 205	Fundamentals of Ecology	3
ENV 230	Environmental Issues	3
One of the Following		
HSS 111	Introduction to IR	3
HSS 115	Introduction to Media Studies	3
	Total Credit Hours	**18**

Note: Students will be offered only one of the HSS subjects.

Semester 4

Course code	Course Title	Credit Hours
ENV 215	Social Theory of Environment	3
ENV 220	Environmental Microbiology	3
ENV 225	Applied Ecology	3
ENV 236	Introduction to Climate Change	3
ENV 245	Introduction to Oceanography	3
HSS 107	Introduction to Psychology	3
	Total Credit Hours	**18**

Semester – Summer

Course code	Course Title	Credit Hours
ENV 240	Environmental Sciences Field Work and Report	3

Semester 5

Course code	Course Title	Credit Hours
ENV 305	Environmental Monitoring	3
ENV 310	Environmental Toxicology	3

ENV 315	Environmental Management System	3
ENV 320	Environmental Biotechnology	3
ENV 335	Analytical Techniques in Environmental Sciences	3
GEO 305	Environmental Geology	3
	Total Credit Hours	**18**

Semester 6

Course code	Course Title	Credit Hours
ENV 425	Occupational Health & Safety	3
ENV 340	Solid Waste Management	3
ENV 325	Environmental Engineering	3
ENV 345	Environmental Hazard & Management	3
Elective 1	**One of the Following**	
GEO 335	Earthquake Seismology	3
GEO 351	Natural Disaster Management	3
ENV 330	Environmental & Natural Resource Economics	3
	Total Credit Hours	**15**

Semester 7

Course code	Course Title	Credit Hours
ENV 405	Pollution Control Technology	3
ENV 415	Natural Resource Management	3
ENV 420	Research Methods in Environmental Sciences	2
GEO 420	Hydrogeology	3
Elective 2	**One of the Following**	
GEO 405	Petroleum Engineering	3
GEO 436	Health, Safety and Environment	3
ENV 410	Environmental Impact Assessment	3
	Total Credit Hours	**14**

Semester 8

Course code	Course Title	Credit Hours
ENV 350	Remote Sensing and GIS for Environment	3
ENV 440	Energy and Environment	3
ENV 430	Environmental Policies & Laws	3

GEO 435	Thesis	6
GEO 445	Comprehensive Viva Voce	0
	Total Credit Hours	**15**

BS – Geo Physics (4 Years)

Campus: Islamabad
Program Duration: 4 Years (8 Semesters)
Programme Timing: Morning
Entry Requirements:
F.Sc (Pre-Engg/Pre-Medical/ A level, ICS, Engg. Diploma or equivalent) with 50% marks.

ROADMAP

Semester 1

Course code	Course Title	Credit Hours
PAK 101	Pakistan Studies	2
ISL 101	Islamic Studies	2
ENG 103	English I	3
MAT 105*	Mathematics	0
CSC 105	Introduction to Computers	3
PHY 101	Physics	3
GEO 105	Physical & General Geology	3
	Total Credit Hours	**16**

*Academic credit of this course is zero but its contact hours, teaching material and tuition fee are equal to a 3 credit hours course.

Semester 2

Course code	Course Title	Credit Hours
CHM 105	Chemistry	3
ENG 104	English -II	3
MAT 115	Calculus & Analytical Geometry	3
GEO 110	Fundamental of Geography & Geomorphology	3
GEO 115	Introduction to Geophysics	3
GEO 120	Field Geology	3
	Total Credit Hours	**18**

Semester 3

Course code	Course Title	Credit Hours
ENG 232	Oral Communication	3
MAT 205	Statistics	3
GEO 205	Structure Geology	3
CSC 205	Programming Fundamentals	3
GEO 210	Mineralogy & Crystallography	3
One of the Following		
HSS 111	Introduction to IR	3
HSS 115	Introduction to Media Studies	3
HSS 201	Introduction to Anthropology	3
HSS 202	Introduction to Sociology	3
	Total Credit Hours	**18**

Note: Students will be offered only one of the HSS subjects.

Semester 4

Course code	Course Title	Credit Hours
GEO 215	Sedimentology	3
GEO 240	Gravity & Magnetic Exploration Techniques	3
GEO 365	Electrical & Radioactive Techniques	3
GEO 230	Geotectonics	3
MAT 210	Advance Mathematics	3
	Total Credit Hours	**15**

Semester – Summer

Course code	Course Title	Credit Hours
GEO 250	Geology and Geophysical Field Work and Report-I	3

Semester 5

Course code	Course Title	Credit Hours
GEO 326	Computing with Matlab	3
GEO 325	Stratigraphy of Pakistan	3
GEO 315	Igneous & Metamorphic Petrology	3
GEO 320	Marine Geology	3
GEO 305	Environmental Geology	3
GEO 370	Geomagnetism & Paleomagnetism	3
	Total Credit Hours	**18**

Semester 6

Course code	Course Title	Credit Hours
GEO 340	Wireline logging	3
GEO 350	Geology of Pakistan	3
GEO 367	Seismic Data Acquisition & Planning	3
GEO 345	Petroleum Geology	3
Elective 1	**One of the Following**	
GEO 335	Earthquake Seismology	3
GEO 351	Natural Disaster Management	3
ENV 330	Environmental & Natural Resource Economics	3
	Total Credit Hours	**15**

Semester – Summer

Course code	Course Title	Credit Hours
GEO 375	Geology and Geophysical Field Work and Report-II	3

Semester 7

Course code	Course Title	Credit Hours
GEO 470	Seismic Data Processing	3
GEO 415	Economic Geology	3
GEO 425	Research Methodology	2

GEO 420	Hydrogeology		3
Elective 2	**One of the Following**		
GEO 405	Petroleum Engineering		3
GEO 436	Health, Safety and Environment		3
ENV 410	Environmental Impact Assessment		3
	Total Credit Hours		**14**

Semester 8

Course code	Course Title	Credit Hours
GEO 445	Seismic Stratigraphy	3
GEO 475	Seismic Data Interpretation	3
GEO 435	GIS & Remote Sensing	3
GEO 460	Thesis	6
GEO 465	Comprehensive Viva Voce	0
	Total Credit Hours	**15**

BS Geo Sciences (4 Years)

Campus: Islamabad & Karachi

Program Duration: 4 Years (8 Semesters)

Program Timing: Morning

Eligibility Criteria:

1. F.Sc. (Pre-Engg/Pre-Medical /A-levels/ICS (Second Division or 45% marks)
2. Associate Engg. Diploma (Polytech) with Equivalent of 45% marks.
3. BU Entry test & Interview

ROADMAP

Semester 1

Course Code	Course Title	Credit hours (T&L)	Total Credit Hrs
PAK 101	Pakistan studies	2	2
ISL 101	Islamic Studies	2	2
ENG 103	English I	3	3
GEO 101	Introduction to Geosciences	2+1	3
MAT 105	Mathematics (for pre-med.)	0	3
CSC 105	Introduction to Computers	2+1	3
PHY 101	Physics	2+1	3
Total		**16**	**16**

Semester 2

Course Code	Course Title	Credit hours (T&L)	Total Credit Hrs.
ENG 104	English II	3	3
GEO 110	Fundamentals of Geography & Geomorphology	3	3
GEO 115	Introduction To Geophysics	3	3
GEO 120	Field Geology	2+1	3
MAT 115	Calculus & Analytical Geometry	3	3
CHM 105	Chemistry	2+1	3
Total		**18**	**18**

Semester 3

Course Code	Course Title	Credit hours (T&L)	Total Credit Hrs.
ENG 232	Oral Communication	3	3
GEO 205	Structural Geology	2+1	3
GEO 210	Mineralogy & Crystallography	2+1	3
CSC 205	Programming Fundamentals	2+1	3
ENV 245	Introduction to Oceanography	3	3
HSS 107 HSS 111 HSS 115 HSS 201 HSS 202	**One of The Following:** Introduction to Psychology Introduction to IR Introduction to Media Studies Introduction to Anthropology Introduction to Sociology	3	3
Total		**18**	**18**

Semester 4

Course Code	Course Title	Credit hours (T&L)	Total Credit Hrs.
GEO 215	Sedimentology	3	3
MAT 205	Statistics	2+1	3
GEO 225	Geochemistry	2+1	3
GEO 230	Geo-tectonics	3	3

	One of The Following:	3	3
HSS 107	Introduction to Psychology		
HSS 111	Introduction to IR		
HSS 115	Introduction to Media Studies		
HSS 201	Introduction to Anthropology		
HSS 202	Introduction to Sociology		
Total		**15**	**15**

Field Work – I

GEO 280	Geosciences Field Work and Report-I	**0+2**	**2**

YEAR-3 Semester 5

Course Code	Course Title	Credit hours (T&L)	Total Credit Hrs.
GEO 305	Environmental Geology	2+1	3
GEO 302	Geophysical Exploration Methods	2+1	3
GEO 315	Igneous & Metamorphic Petrology	2+1	3
GEO 350	Geology of Pakistan	3	3
GEO 437	GIS & Remote Sensing	2+1	3
GEO 325	Stratigraphy of Pakistan	3	3
Total		**18**	**18**

Semester 6

Course Code	Course Title	Credit hours (T&L)	Total Credit Hrs.
GEO 320	Marine Geology	2+1	3
GEO 335	Earthquake Seismology	2+1	3
GEO 410	Engineering Geology	2+1	3
GEO 345	Petroleum Geology	3	3
GEO 425	Research Methodology	2	2
Total		**14**	**14**

Field Work – II

GEO 380	Geosciences Field Work and Report II	**0+2**	**2**

YEAR-4 (Specialization Year)* **

Semester 7

Course Code	Course Title	Credit hours (T&L)	Total Credit Hrs.
GEO XXX	Specialize Course – I	2+1	3
GEO XXX	Specialize Course – II	2+1	3
GEO XXX	Specialize Course – III	2+1	3
GEO XXX	Specialize Course – IV	2+1	3
GEO XXX	Specialize Course – V	2+1	3
Total		**15**	**15**

Field Work-III

GEO 480	Geosciences Field Work and Report III	**0+2**	**2**

Semester VIII

Course Code	Course Title	Credit hours (T&L)	Total Credit Hrs.
GEO XXX	Specialize Course – VI	2+1	3
GEO XXX	Specialize Course – VII	2+1	3
ENV 425	Occupational Health & Safety	3+0	3
GEO 490	Thesis	0+6	6
Total		**15**	**15**
Grand Total		**135 CH**	

* All Courses in the Specialization will be offered during Year-IV (semester VII-VIII) and will be of 400s Level
** The courses under Specialization mentioned as GEO XXX (above) will be picked up from listed courses given below, accordingly.

SPECIALIZATION COURSES
1. The following 3-Specializations/choices , i.e., Marine Geology; Marine Geophysics; & GIS & Remote Sensing, will be offered to students at Semester-VII, to choose from. The list of courses for each specialization is listed below:

	Marine Geology	Marine Geophysics	GIS & RS
1	GEO 461 – Coastal Geology & Geomorphology	GEO 461 – Coastal Geology & Geomorphology	GEO 481- GIS Database Management
2	GEO 462 – Physical Oceanography & Surveying	GEO 475 – Seismic Data Interpretation	GEO 482 – Satellite Image Processing
3	GEO 463 – Ocean Crust Sedimentation	GEO 463 – Ocean Crust Sedimentation	GEO 483 – GIS Data Analysis
4	GEO 445- Seismic Stratigraphy	GEO 445 – Seismic Stratigraphy	GEO 484 – Cartography & Mapping
5	GEO 415 – Economic Geology	GEO 441 – Applied Borehole Geophysics	GEO 485 – GIS Surveying & GPS Tech.
6	GEO 420 – Hydrogeology	GEO 420 – Hydrogeology	GEO 486 – Mapping of Natural Resources
7	GEO 444 – Applied GIS & RS Techniques		

BS – Geology (4 Years)

Campus: Islamabad
Program Duration: 4 Years (8 Semesters)
Programme Timing: Morning
Entry Requirements:
F.Sc (Pre-Engg/Pre-Medical/ A level, ICS, Engg. Diploma or equivalent) with 50% marks.

ROADMAP

Semester 1

Course code	Course Title	Credit Hours
PAK 101	Pakistan Studies	2
ISL 101	Islamic Studies	2
ENG 103	English I	3
MAT 105*	Mathematics	0
CSC 105	Introduction to Computers	3
PHY 101	Physics	3
GEO 105	Physical & General Geology	3
	Total Credit Hours	16

*Academic credit of this course is zero but its contact hours, teaching material and tuition fee are equal to a 3 credit hours course.

Semester 2

Course code	Course Title	Credit Hours
CHM 105	Chemistry	3
ENG 104	English -II	3
MAT 115	Calculus & Analytical Geometry	3
GEO 110	Fundamental of Geography & Geomorphology	3
GEO 115	Introduction to Geophysics	3
GEO 120	Field Geology	3
	Total Credit Hours	18

Semester 3

Course code	Course Title	Credit Hours
ENG 232	Oral Communication	3
MAT 205	Statistics	3
GEO 205	Structure Geology	3
CSC 205	Programming Fundamentals	3
GEO 210	Mineralogy & Crystallography	3
One of the Following		
HSS 111	Introduction to IR	3
HSS 115	Introduction to Media Studies	3
HSS 201	Introduction to Anthropology	3
HSS 202	Introduction to Sociology	3
	Total Credit Hours	18

Note: Students will be offered only one of the HSS subjects.

Semester 4

Course code	Course Title	Credit Hours
GEO 215	Sedimentology	3
GEO 220	Optical Mineralogy	3
GEO 225	Geochemistry	3
GEO 230	Geotectonics	3
MAT 210	Advance Mathematics	3
	Total Credit Hours	15

Semester – Summer

Course code	Course Title	Credit Hours
GEO 235	Geology Field Work & Report-I	3

Semester – 5

Course code	Course Title	Credit Hours
GEO 326	Computing with Matlab	3
GEO 325	Stratigraphy of Pakistan	3
GEO 315	Igneous & Metamorphic Petrology	3
GEO 320	Marine Geology	3
GEO 305	Environmental Geology	3
GEO 310	Paleontology	3
	Total Credit Hours	**18**

Semester – 6

Course code	Course Title	Credit Hours
GEO 340	Wireline logging	3
GEO 350	Geology of Pakistan	3
GEO 330	Micropaleontology & Biostratigraphy	3
GEO 345	Petroleum Geology	3
GEO 335	Earthquake Seismology	3
	Total Credit Hours	**15**

Semester – Summer

Course code	Course Title	Credit Hours
GEO 355	Geology Field Work & Report-II	3

Semester – 7

Course code	Course Title	Credit Hours
GEO 410	Engineering Geology	3
GEO 415	Economic Geology	3
GEO 425	Research Methodology	2
GEO 420	Hydrogeology	3

GEO 405	Petroleum Engineering	3
	Total Credit Hours	**14**

Semester – 8

Course code	Course Title	Credit Hours
GEO 445	Seismic Stratigraphy	3
GEO 430	Geochemical Exploration Technique	3
GEO 435	GIS & Remote Sensing	3
GEO 440	Thesis	6
GEO 465	Comprehensive Viva Voce	0
	Total Credit Hours	**15**

MS - Environmental Sciences (2 Years)

Campus: Islamabad & Karachi
Program Duration: 2 Years, 4 Semesters
Program Timing: Evening
Entry Requirements
BS/MSc Earth Sciences with 2.50 CGPA or 50% marks
Additionally, applicants must provide HEC verification of all academic certificates / degrees.

ROADMAP

Semester	Credit Hours (Courses)
1	12 CH (4 Compulsory courses)
2	12 CH (4 Elective courses)
3	03 CH (Thesis)
4	03 CH (Thesis)
Total Credit Hours	30

Compulsory Courses

Course Codes	Course Title	Credit Hours
ENV 531	Environmental Analytical Techniques	3
ENV 572	Climate Change Adaptation and Mitigation	3
ENV 502	Environmental Management	3
ESC 701	Research Methodology	3

Elective Courses

Course Codes	Course Title	Credit Hours
ENV 530	Environmental Biotechnology	3
ENV 503	Energy and Environment	3
ENV 520	Solid and Hazardous Waste Management	3
ENV 513	Health, Safety and Environment	3
ENV 515	Environmental Risk Assessment and Management	3
GEO 520	Hydrochemistry and Groundwater Pollution	3
ENV 509	Population Dynamics and the Environment	3
ENV 510	Environmental Auditing	3
ENV 511	Environmental Economics	3
ENV 537	Environmental Engineering	3
ENV 514	Remote Sensing and GIS Applications in Environment	3
ENV 518	Watershed Management	3
ENV 519	Epidemiology	3
ENV 521	Marine Pollution	3
ENV 505	Environmental Policies and Laws	3
ENV 533	Advanced Environmental Chemistry	3
GEO 528	Groundwater Modeling	3
ENV 504	Environmental Impact Assessment	3
ENV 522	Disaster Management	3
ENV 507	Sustainable Development	3
ENV 508	Environmental Sociology	3
ENV 534	Advanced Environmental Microbiology	3
ENV 535	Freshwater Ecology	3

ENV 536	Advanced Environmental Geology	3
ENV 512	Project Management	3
ENV 516	Wildlife, Forestry and Wetland Management	3
ENV 524	Air and Noise Pollution	3
ENV 584	Advances in Plant Ecology	3
Any other relevant course from Geology and Geophysics disciplines		

MS (Geo-Physics) 2 Years

Campus: Islamabad
Program Duration: 2 Years (4 Semesters)
Program Timing: Evening
Entry Requirements:

BS/MSc Earth Sciences with 2.50 CGPA or 50% marks Additionally, applicants must provide HEC verification of all academic certificates/degrees.

ROADMAP

Semester	Credit Hours (Courses)
1	12 CH (4 Compulsory Courses)
2	12 CH (4 Elective Courses)
3	03 CH (Thesis)
4	03 CH (Thesis)
Total Credit Hours	30

Compulsory Courses

Course Code	Course Title	Credit Hours
GEO 503	Advanced Petroleum Geology	3
GEO 548	Advanced Seismic Stratigraphy	3
GEO 540	Advanced Seismic Techniques	3
ESC 701	Research Methodology	3

List of Elective Courses

Course code	Course Title	Credit Hours
GEO 518	3D Seismic Interpretation	3
GEO 517	Seismic Data Analysis	3
GEO 515	Exploration Geophysics	3
GEO 544	Borehole Geophysics	3
GEO 513	Advanced Seismology	3
GEO 543	Advanced Earthquake Seismology	3
GEO 507	Basin Analysis	3
GEO 534	Reservoir Geology	3
GEO 545	Petrophysical Analysis	3
GEO 531	Advanced Structural Geology	3
GEO 508	Stratigraphy and Petroleum Prospects of Pakistan	3
GEO 598	Drilling Operations and Well Site Geology	3
GEO 514	Mining Geophysics	3
GEO 542	Geodesy	3
GEO 549	Near Surface Geophysics	3
GEO 510	Development of Groundwater Resources	3
GEO 528	Groundwater Modeling	3
GEO 530	Advanced Marine Geology	3
ENV 513	Health Safety and Environment	3
GEO 505	Advanced Sedimentology	3
GEO 501	Global Tectonics	3
GEO 597	Applications of GIS in Geosciences	3

GEO 601	Gravity and Magnetic Exploration Methods	3
GEO 602	Electrical Exploration Methods	3
GEO 603	Engineering Geophysics	3
GEO 502	Geophysical Exploration Methods	3
GEO 512	Mineral Prospecting and Exploration	3
GEO 519	Coal Geology	3
GEO 524	Clastic Sedimentology	3
GEO 525	Carbonate Sedimentology	3
ENV 572	Climate Change Adaption and Mitigation	3
ENV 504	Environmental Impact Assessment	3
GEO 516	Applied Environmental Geophysics	3
GEO 604	Machine Learning for Geosciences	3
GEO 605	Applications of Geostatistics in Geosciences	3
GEO 606	Reservoir Geomechanics	3
GEO 607	Unconventional Hydrocarbon Resources	3
GEO 608	Practical Applications of Geosciences Softwares	3
THS 701	MS Thesis	6
Any other relevant course from Geology and Environmental Science disciplines		

MS Geology (2 Years)

Campus: Islamabad
Program Duration: 2 Years (4 Semesters)
Program Timing: Evening
Entry Requirements:

BS/MSc Earth Sciences with 2.50 CGPA or 50% marks Additionally, applicants must provide HEC verification of all academic certificates / degrees.

ROADMAP

Semester	Credit Hours (Courses)
1	12 CH (4 Compulsory courses)
2	12 CH (4 Elective courses)
3	03 CH (Thesis)
4	03 CH (Thesis)
Total Credit Hours	30

Compulsory Courses

Course Codes	Course Title	Credit Hours
GEO 503	Advanced Petroleum Geology	3
GEO 501	Global Tectonics	3
GEO 512	Mineral Prospecting and Exploration	3
ESC 701	Research Methodology	3

Elective Courses

Course Codes	Course Title	Credit Hours
GEO 597	Applications of GIS in Geosciences	3
GEO 548	Advanced Seismic Stratigraphy	3
GEO 505	Advanced Sedimentology	3
GEO 506	Hydrocarbon Geochemistry	3
GEO 507	Basin Analysis	3
GEO 508	Stratigraphy and Petroleum Prospects of Pakistan	3

GEO 598	Drilling Operations and Well Site Geology	3
GEO 510	Development of Groundwater Resources	3
GEO 531	Advanced Structural Geology	3
GEO 520	Rock Mechanics	3
GEO 521	Soil Mechanics	3
GEO 522	Geochemical Exploration	3
GEO 523	Isotope Geochemistry	3
GEO 524	Clastic Sedimentology	3
GEO 525	Carbonate Sedimentology	3
GEO 526	Clay Mineralogy	3
GEO 527	Hydrochemistry & Groundwater Pollution	3
GEO 528	Groundwater Modeling	3
GEO 529	Industrial Mineralogy	3
GEO 530	Advanced Marine Geology	3
GEO 534	Reservoir Geology	3
GEO 535	Applied Mineralogy	3
GEO 532	Fundamentals of Gemology	3
GEO 537	Advanced Engineering Geology	3
ENV 537	Environmental Engineering	3
ENV 513	Health Safety and Environment	3
GEO 536	Advanced Igneous Petrology	3
GEO 538	Advanced Metamorphic Petrology	3
GEO 539	Ore Geology	3
GEO 546	Advanced Biostratigraphy	3
GEO 512	Mineral Prospecting and Exploration	3

GEO 502	Geophysical Exploration Methods	3
GEO 519	Coal Geology	3
ENV 572	Climate Change Adaption and Mitigation	3
ENV 522	Disaster Management	3
ENV 504	Environmental Impact Assessment	3
GEO 516	Applied Environmental Geophysics	3
GEO 603	Engineering Geophysics	3
GEO 604	Machine Learning for Geosciences	3
GEO 605	Applications of Geostatistics in Geosciences	3
GEO 606	Reservoir Geomechanics	3
GEO 607	Unconventional Hydrocarbon Resources	3
GEO 608	Practical Applications of Geosciences Software's	3
THS 701	MS Thesis	6
Any other relevant course from Geophysics/Environmental Sciences		

PhD Environmental Sciences

Campus: Islamabad

Program Duration: 3 Years (6 Semesters)

Program Timing: Evening

Eligibility Criteria:

The application form duly filled and supported with relevant documents including attested copies of degrees/certificates should be submitted to the university admission office.

Applicants should have MS (a minimum education of 18 or 17.5 years) in environmental sciences or any other related field.

A minimum CGPA of 3.0 in the semester s ystem or 60% marks in the annual system is mandatory. Certificate of GAT subject or Departmental Test with minimum score of 70%.

The research proposal (5 to 6 pages) is the key component for the admission which should refer to a specific area (or areas) of the research interest.

Additionally, applicants must provide HEC verification of all academic certificates / degrees.

ROADMAP

Semester – 1

Course Code	Course Title	Credit Hours
ENV- 801	Recent Trends in Environmental Sciences	3+0
ENV- 802	Advanced Ecosystem Management	3+0
—	Elective course	—

Semester – 2

Course Code	Course Title	Credit Hours
ENV- 803	Environmental Health Risk Assessment	3
—	Elective course	—
—	Elective course	—

Elective Courses

Course. #	Course Title	Credit Hours
ENV- 804	Independent Research Study	3
ENV- 805	Air Pollution & Control	3
ENV- 806	Environmental Seminar	3
ENV- 807	Field Trips to Industries	3
ENV- 808	Environmental Monitoring, Sampling and Analysis	3
ENV- 809	Environmental Data Analysis	3
ENV- 810	Critical Review of Literature	3
ENV- 811	Environmental Pollution and Climate Change	3
ENV- 812	Advanced Environmental Legislation and Regulations	3

ENV- 813	Hazardous Solid Waste Management	3
ENV- 814	Natural Resources & Associated Problems	3
ENV- 815	Environmental Social Issues	3
ENV- 816	Alternative Energy Sources	3
ENV-817	Advanced Research Methodology	3

- Courses are selected as partial fulfillment of the requirement for the PhD Degree.
- The courses offered in either semester depending on the availability of faculty/strength of the students.
- The supervisor would be selected on student aspiration/whatsoever their dissertation topics.

Research Themes of Environmental Science

Destruction of the World's Coral Reefs	Energy Conservation
Scientific Consensus on Climate Change	Recycling
Usage of Wind, Solar and Other Alternative Energy Sources	Pollution
	Soil quality
The Ozone Hole	Greenhouse effect
Waste and Pesticides Soil Contamination	Climate change
Coral Reef Destruction	Air Quality
Animal Grazing	Recycling
Acid Rain, Fish and Wildlife	Renewable Energy
Ecological Integrity of Groundwater and Fluvial Systems	Save energy
	Waste Management
Transition to Cleaner Vehicles and Fuels	Balanced Ecosystem
Green Power	Habitat Model
Rainwater Harvesting	Organic Garden

PhD Geo-Physics (3 Years)

Campus: Islamabad
Program Duration: 3 Years (6 Semesters)
Program Timing: Evening

Eligibility Criteria:

18 years of education. MS/MPhil degree in Geophysics
HEC recognized MS/MPhil degree in Geophysics with 3.00/400 CGPA (Semester System) or 60% marks (Annual System) with Subject
GAT/University Test Prior to admission.
Additionally, applicants must provide HEC verification of all academic certificates / degrees.

ROADMAP

Semester	Credit Hours
1	9 (Course Work)
2	9 (Course Work)
3 to onward	Comprehensive Exam. Synopsis Writing, Presentation & Final Thesis Defence
	36 (Research work)
Total Credit Hours	54

Semester – 1

Course Code	Course Title	Credit Hours
GEO 801	Tectonic Evolution of Pakistan	3
GEO 828	Contemporary Trends in Geosciences	3
GEO 8xx	Elective course I	3

Semester – 2

Course Code	Course Title	Credit Hours
GEO 803	Seismic Imaging Techniques	3
GEO 8xx	Elective course II	3

Elective Courses

Courses	Course Title	Credit Hours
GEO 804	3D Seismic Attributes for Reservoir Characterization	3
GEO 805	3D Seismic Acquisition in Offshore & Onshore	3
GEO 806	Reservoir Modeling	3
GEO 807	GIS applications in Geophysics	3
GEO 808	Signal Processing in Geophysics	3
GEO 809	Geosciences Software	3
GEO 826	Disaster Risk Management	3
GEO 811	Advanced Reflection Seismology	3
GEO 812	Mining Geophysics	3
GEO 829	Advanced Earthquake Seismology	3
GEO 813	Gravity & Magnetic Modeling	3
GEO 810	Petrophysics	3
GEO 849	Hydrocarbon Exploration Techniques	3
GEO 850	Advanced Basin Analysis	3
GEO 851	Reservoir Characterization	3
GEO 853	Advanced Sequence Stratigraphy	3
GEO 868	Advanced Structural Geology	3
GEO 869	Geostatistics	3
GEO 871	Advanced Petroleum Geology	3
ENV 817	Advanced Research Methodology	3
GEO 872	Advanced Electrical Methods	3

Research Themes of Geology & Geophysics
Earth & Environmental Sciences is a challenging and important field of science. Environmental degradation has occurred over time due to population explosion, over exploitation of resources, increasing land use, lack of environmental awareness, climatic shift etc. due to which it is nowadays a global issue of concern. Areas of priority are Hydrogeology, Earthquake Seismology, Well logging and Environmental studies, and Crustal studies.

The potential research themes / areas are as follows:

Marine Processes	Archaeological science
Coastal studies	Atmospheric composition
Geology and geophysics of ocean basins	Basin studies
Palaeoceanographic and paleoclimatic modelling	Climate variability & change
	Economic geology
Environmental Geology and Geochemistry	Geomicrobiology
	Tectonics & geodynamics
River-bank stability and sediment dynamics	Subduction initiate & plate tectonics
	Geodynamic modelling codes
Mineral and Petroleum Resources	Effective rheology of melt
Resource exploration of coal and petroleum	Fold and thrust belts
	Melt migration and lithospheric mantle and crust
Petrographic and Geochemical	
Geo-coastal Research	Tectonic and erosion
Plate kinematics	Continents collide
Frontier basin exploration	Shear localization
Paleoclimate modelling	3D investigation & photogrammetric methods
Seismology	
Evaluation of earthquake risk	Geoelectrical 3D-tomography

PhD - Geology (3 Years)

Campus: Islamabad
Program Duration: 3 Years (6 Semesters)
Program Timing: Evening

Eligibility Criteria:

18 years of education in the relevant field 3.00/400 CGPA in MS program with Subject GAT/University Test Prior to admission or 60% marks (Annual System) Additionally, applicants must provide HEC verification of all academic certificates / degrees.

ROADMAP

Semester	Credit Hours
1	9 (Course Work)
2	9 (Course Work)
3-6	Comprehensive Exam. Synopsis Writing, Field & Lab work, Presentation & Defence
Research work	36
Total Credit Hours	54

Semester – 1

Course Code	Course Title	Credit Hours
GEO 801	Tectonic Evolution of Pakistan	3
GEO 802	Geosciences Seminar	3
GEO 8xx	Elective course-I	3

Semester – 2

Course Code	Course Title	Credit Hours
GEO 8xx	Advanced Petroleum Geology	3
GEO xx	Elective course- II	3
GEO 8xx	Elective course-III	3

Elective Courses for Mineralogy and Petrology Group

Courses	Course Title	Credit Hours
GEO 831	Igneous Petrogenesis	3
GEO 832	Stable Isotope Geoscience	3
GEO 833	Ore Mineralogy	3
GEO 834	Geochemical Prospecting	3
GEO 835	Radiogenic Isotopes Geoscience	3
GEO 836	Ore Petrology	3
GEO 837	Applied Mineralogy	3
GEO 838	Fluid Inclusions	3
GEO 839	Gemmology	3
GEO 840	Metamorphic Petrogenesis	3
GEO 841	Advanced Geochemistry	3
GEO 842	Advanced Mineralogy	3
GEO 843	Mineral Prospecting and Exploration	3
GEO 844	Mineral Deposit Evaluation	3

Elective Courses for Petroleum Group

Courses	Course Title	Credit Hours
GEO 845	Carbonate Sedimentology	3
GEO 846	Clastic Sedimentology	3
GEO 847	Petroleum Geochemistry	3
GEO 848	Advanced Marine Geology	3
GEO 849	Hydrocarbon Exploration Techniques	3
GEO 850	Advanced Basin Analysis	3
GEO 851	Reservoir Characterization	3
GEO 852	Advanced Micropaleontology	3
GEO 853	Advanced Sequence Stratigraphy	3

Elective Courses for Hydro geology and Engineering Geology Group

Courses	Course Title	Credit Hours
GEO 854	Watershed Management	3
GEO 855	Contaminant Hydrogeology	3
GEO 856	Advanced Rock Mechanics	3
GEO 857	Advanced Soil Mechanics	3
GEO 858	Advanced Quantitative Hydrogeology	3
GEO 859	Advanced Engineering Geology	3
GEO 860	Ground Water Modeling (Flow and Transport)	3
GEO 861	Advanced Hydrogeochemistry	3
GEO 862	Desertification	3
GEO 863	Geo technical Engineering	3

Common Elective Courses for all the Groups

Courses	Course Title	Credit Hours
GEO 866	Advanced Instrumentation	3
GEO 867	Glaciology	3
GEO 868	Advanced Structural Geology	3
GEO 829	Advanced Earthquake Seismology	3
GEO 869	Geostatistics	3
GEO 826	Disaster Risk Management	3
GEO 870	Advanced Geoinformatics	3
GEO 810	Petrophysics	3

Research Themes of Geology & Geo physic

Earth & Environmental Sciences is a challenging and important field of science. Environmental degradation has occurred over time due to population explosion, over exploitation of resources, increasing land use, lack of environmental awareness, climatic shift etc. due to which it is nowadays a global issue of concern. Areas of priority are Hydrogeology, Earthquake Seismology, Well logging and Environmental studies, and Crustal studies.

The potential research themes / areas are as follows:

Marine Processes	Archaeological science
Coastal studies	Atmospheric composition
Geology and geophysics of ocean basins	Basin studies
Palaeoceanographic and paleoclimatic modelling	Climate variability & change
	Economic geology
Environmental Geology and Geochemistry	Geomicrobiology
River-bank stability and sediment dynamics	Tectonics & geodynamics
	Subduction initiate & plate tectonics
Mineral and Petroleum Resources	Geodynamic modelling codes
Resource exploration of coal and petroleum	Effective rheology of melt
	Fold and thrust belts
Petrographic and Geochemical	Melt migration and lithospheric mantle and crust
Geo-coastal Research	
Plate kinematics	Tectonic and erosion
Frontier basin exploration	Continents collide
Paleoclimate modelling	Shear localization
Seismology	3D investigation & photogrammetric methods
Evaluation of earthquake risk	
	Geo electrical 3D-tomography

DEPARTMENT OF COMPUTER SCIENCES

Programs offered:

- BS (Artificial Intelligence)
- BS (Computer Sciences)
- BS (Information Technology)
- MS (Computer Sciences)
- MS (Data Sciences)
- MS (Information Security)
- MS (Mathematics)
- MS (Telecom & Networking)
- PhD (Computer Sciences)
- PhD (Mathematics)

BS - Artificial Intelligence (4 Years)

Campus: Islamabad & Karachi

Duration: 4 Years (8 Semesters)

Program Timing: Morning

Eligibility Criteria:

Minimum 50% marks in Intermediate (HSSC) Examination (Pre-Medical/Pre-Engg.) or equivalent qualification with Mathematics certified by IBCC.

Objectives of the Programme:

- To provide an understanding of the fundamental concepts of Artificial Intelligence.
- To enrich the students with modern tools and technologies with respect to an ever changing business and technological environment.
- To provide mathematical and logical skills critical for solving AI problems.
- To develop skills in order to collaborate effectively through written and oral communication
- To develop effective team working/leading skills

Outcomes of the Programme: Graduates capable of fulfilling developmental and research needs in the domain of AI.

ROADMAP

Semester 1

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
None	GSC 110	Applied Calculus and Analytical Geometry	3	0	3	
None	CSC 114	Introduction to Information & Communication Technology	2	0	2	
None	CSL114	Introduction to Information & Communication Technology	0	1	1	16
None	ENG 105	Functional English	3	0	3	
None	CSC 113	Computer Programming	3	0	3	
None	CSL113	Computer Programming Lab	0	1	1	
None	GSC 221	Discrete Mathematics	3	0	3	

Semester 2

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
None	CEN 120	Digital Logic Design	3	0	3	
None	CEL 120	Digital Logic Design Lab	0	1	1	
CSC 113	CSC 210	Object Oriented Programming	3	0	3	
CSC 113	CSL 210	Object Oriented Programming	0	1	1	18
None	CSC 220	Database Management	3	0	3	
None	CSL 220	Database Management Systems	0	1	1	
None	GSC 121	Linear Algebra	3	0	3	
None	GSC 122	Probability and Statistics	3	0	3	

Semester 3

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
ENG 105	HSS 120	Communication Skills	3	0	3	
GSC 110	GSC 210	Differential Equations	3	0	3	
None	CEN 222	Data Communication and Networking	3	0	3	
None	CEL 222	Data Communication and Networking Lab	0	1	1	18
CSC 113	CSC 221	Data Structures and Algorithms	3	0	3	
CSC 113	CSL221	Data Structures and	0	1	1	
CSC 210	AIC 201	Artificial Intelligence	2	1	3	
CSC 210	AIL 201	Artificial Intelligence Lab	0	1	1	

Semester 4

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
CSC 221	CSC 320	Operating Systems	3	0	3	
CSC 221	CSL320	Operating Systems Lab	0	1	1	
CEN 120	CEN 324	Computer Organization & Assembly Language	3	0	3	
CEN 120	CEL 324	Computer Organization & Assembly Language Lab	0	1	1	17
CSC 221	CSC 321	Design and Analysis of Algorithms	3	0	3	
AIC 201	AIC 202	Programming for Artificial Intelligence	2	0	2	
AIL 202	AIL 202	Programming for Artificial Intelligence Lab	0	1	1	
		AI Elective 1	3	-	3	

Semester 5

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
CEN 222	CSC 407	Information Security	3	0	3	
AIC 202	AIC 203	Knowledge Representation &	3	0	3	
AIC 202	AIC 301	Machine Learning	2	0	2	
AIL 202	AIL 301	Machine Learning Lab	0	1	1	
CSC 320	AIC 302	Parallel & Distributed Computing	2	0	2	18
CSL 320	AIL 302	Parallel & Distributed Computing Lab	0	1	1	
		AI Elective 2 (3+0 or 2+1)			3	
		University Elective - I	3	0	3	

Semester 6

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
AIC 202	AIC 303	Artificial Neural Networks	2	0	2	
AIL 202	AIL 303	Artificial Neural Networks Lab	0	1	1	
None	AIC 304	Computer Vision	2	0	2	
None	AIL 304	Computer Vision Lab	0	1	1	17
None	CSC 441	Natural Language Processing	3	0	3	
		AI Elective 3	3	0	3	
None	ISL 101	Islamic Studies/Ethics	2	0	2	
		University Elective - II	3	0	3	

Summer:

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
		Internship				

Semester 7:

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
NONE	ESC 498	Project - I	0	3	3	
None	SEN 220	Software Engineering	3	0	3	
HSS 120	HSS 320	Technical Writing & presentation skills	3	0	3	14
		AI Elective 4 (3+0 or 2+1)	-	-	3	
None	PAK 101	Pakistan Studies	2	0	2	

Semester 8:

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
NONE	ESC 499	Project – II	0	3	3	12
None	CSC 307	Professional Practices	3	0	3	
		University Elective - III	3	0	3	
		University Elective - IV	3	0	3	
		Total Credit Hours				**130**

General Education Courses (19 credit hours)

Pre requisite	Course Code	Course Title	Lec	Lab	CR
None	ENG 105	Functional English	3	0	3
ENG 105	HSS 120	Communication Skills	3	0	3
HSS 120	HSS 320	Technical Writing & presentation skills	3	0	3
None	CSC 307	Professional Practices	3	0	3
None	CSC 307	Professional Practices	3	0	3
None	CSC 114	Introduction to Information & Communication Technology	2	1	3
None	PAK 101	Pakistan Studies	2	0	2
None	ISL 101	Islamic Studies	2	0	2

Mathematics and Science Foundation Courses (12 credit hours)

Pre requisite	Course Code	Course Title	Lec	Lab	CR
None	GSC 110	Applied Calculus & Analytical Geometry	3	0	3
None	GSC 122	Probability & Statistics	3	0	3
None	GSC 121	Linear Algebra	3	0	3
GSC 110	GSC 210	Differential Equations	3	0	3

University Electives (12 credit hours)

Pre requisite	Course Code	Course Title	Lec	Lab	CR
Foreign Language Elective					
None	HSS459	Foreign Language	3	0	3
Management Science Electives					
None	MGT 111	Principles of Management	3	0	3
None	MKT 110	Principles of Marketing	3	0	3
None	FIN 201	Fundamentals of Finance	3	0	3
None	MGT 242	Organizational Theory & Behavior	3	0	3
Social Science Electives					
None	HSS 107	Introduction to Psychology	3	0	3
None	HSS 202	Introduction to Sociology	3	0	3
None	HSS 115	Introduction to Media Studies	3	0	3
None	BES 103	Critical Thinking	3	0	3
Economics Electives					
None	HSS 410	Entrepreneurship	3	0	3
None	HSS 411	Engineering economics and management	3	0	3
None	ESCO 520	Economics	3	0	3

Computing Core Courses (39 credit hours)

Pre requisite	Course Code	Course Title	Lec	Lab	CR
None	CSC 113	Computer Programming	3	1	4
CSC 113	CSC 210	Object Oriented Programming	3	1	4
CSC 113	CSC 221	Data Structure & Algorithms	3	1	4
None	GSC 221	Discrete Mathematics	3	0	3
CSC 221	CSC 320	Operating Systems	3	1	4
None	CSC 220	Database Management Systems	3	1	4
None	SEN -220	Software Engineering	3	0	3
None	CEN 222	Data Communication and Networking	3	1	4
CEN 222	CSC 407	Information Security	3	0	3
None	ESC 498	Final Year Project	0	6	6

Computer Science Core Courses (18 credit hours)

Pre requisite	Course Code	Course Title	Lec	Lab	CR
CEN 120	CEN 324	Computer Organization and Assembly Language	3	1	4
GSC 113	CEN 120	Digital Logic Design	3	1	4
CSC 221	CSC 321	Design and Analysis of Algorithms	3	0	3
CSC 320	AIC 302	Parallel & Distributed Computing	2	1	3
CSC 210	AIC 201	Artificial Intelligence	3	1	4

Artificial Intelligence Core Courses (18 credit hours)

Pre requisite	Course Code	Course Title	Lec	Lab	CR
AIC 201	AIC 202	Programming for Artificial Intelligence	2	1	3
AIC 202	AIC 301	Machine Learning	2	1	3
AIC 202	AIC 303	Artificial Neural Networks	2	1	3
AIC 202	AIC 203	Knowledge Representation & Reasoning	3	0	3
None	AIC 304	Computer Vision	2	1	3
None	CSC 441	Natural Language Processing	3	0	3

Artificial Intelligence Electives (12 Credit hours)

Pre-requisite	Course Code	Course Title	Lec	Lab	CR
GSC 122	AIC 305	Advance Statistics	3	0	0
None	CSC 315	Theory of Automata	3	0	0
	CSC 452	Data Mining	3	0	0
	AIC 401	Deep Learning	2	1	3
	AIC 306	Speech Processing	3	0	0
	AIC 402	Reinforcements Learning	3	0	0
	AIC 403	Fuzzy Systems	2	1	3
	AIC 307	Evolutionary Computing	3	0	0
	AIC 308	Agent-based Modelling	3	0	0
CSC 225	SEN 455	Knowledge Based Management System	3	0	0
None	CEN 458	Robotics	3	0	0
None	ITC 411	Cyber Security	3	0	0

BS - Computer Science (4 Years)

Campus: Islamabad, Karachi & Lahore
Regular Programme Duration: 4 Years (8 Semesters)
Programme Timing: Morning
Eligibility Criteria:
Minimum 50% marks in Intermediate (HSSC) Examination (Pre-Medical/ Pre-Engg.) or equivalent qualification with Mathematics certified by IBCC.

Pre-Medical students must pass deficiency courses of Mathematics of 6 credit hours within one year

ROADMAP

Semester 1:

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
None	GSC 110	Applied Calculus and Analytical Geometry	3	0	3	
None	CSC 114	Introduction to Information & Communication Technology	2	0	2	
None	CSL 114	Introduction to Information & Communication Technology Lab	0	1	1	16
None	ENG 105	Functional English	3	0	3	
None	CSC 113	Computer Programming	3	0	3	
None	CSL 113	Computer Programming Lab	0	1	1	
None	GSC 114	Applied Physics	2	0	2	
None	GSL 114	Applied Physics Lab	0	1	1	

Semester 2:

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
		University Elective – I	3	0	3	
ENG 105	HSS 120	Communication Skills	3	0	3	
CSC 113	CSC 210	Object Oriented Programming	3	0	3	
CSL 113	CSL 210	Object Oriented Programming Lab	0	1	1	17
GSC 113	CEN 120	Digital Logic Design	3	0	3	
GSCL 113	CEL 120	Digital Logic Design Lab	0	1	1	
None	GSC 221	Discrete Mathematics	3	0	3	

Semester 3:

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
None	GSC 122	Probability and Statistics	3	0	3	
GSC 110	GSC 211	Multivariable Calculus	3	0	3	
CEN 120	CEN 324	Computer Organization& Assembly Language	3	0	3	
CEN 120	CEL 324	Computer Organization& Assembly Language Lab	0	1	1	17
CSC 113	CSC 221	Data Structures and Algorithms	3	0	3	
CSC 113	CSL 221	Data Structures and Algorithms Lab	0	1	1	
None	CSC 307	Professional Practices	3	0	3	

Semester 4:

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
		University Elective – II	3	0	3	
None	CSC 220	Database Management Systems	3	0	3	
None	CSL 220	Database Management Systems Lab	0	1	1	
None	CEN 222	Data Communication and Networking	3	0	3	**17**
None	CEL 222	Data Communication and Networking Lab	0	1	1	
NONE	CSC 315	Theory of Automata	3	0	3	
GSC 110	GSC 210	Differential Equations	3	0	3	

Semester 5:

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
CSC 221	CSC 320	Operating Systems	3	0	3	
CSC 221	CSL 320	Operating Systems Lab	0	1	1	
None	SEN 220	Software Engineering	3	0	3	
CSC 315	CSC 323	Compiler Construction	2	0	2	
CSC 315	CSL 323	Compiler Construction Lab	0	1	1	18
CSC 221	CSC 321	Design and Analysis of Algorithms	3	0	3	
None	GSC 121	Linear Algebra	3	0	3	
None	ISL 101	Islamic Studies / Ethics	2	0	2	

Semester 6:

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
CSC 210	CSC 325	Artificial Intelligence	3	0	3	
CSC 210	CSL 325	Artificial Intelligence Lab	0	1	1	
GSC 210	GSC 320	Numerical Analysis	3	0	3	
HSS 120	HSS 320	Technical Writing & presentation skills	3	0	3	16
		Elective 1 (3+0 or 2+1)	–	–	3	
		Elective 2 (3+0 or 2+1)	–	–	3	

Summer:

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
		Internship				

Semester 7:

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
NONE	ESC 498	Project – I	0	3	3	**17**
CSC 320	CEN 455	Parallel & Distributed Computing	3	0	3	
None	PAK 101	Pakistan Studies	2	0	2	
		University Elective – III	3	0	3	
		Elective 3 (3+0 or 2+1)	–	–	3	
		Elective 4 (3+0 or 2+1)	–	–	3	

Semester 8:

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
NONE	ESC 499	Project – II	0	3	3	
CEN 222	CSC 407	Information Security	3	0	3	
		University Elective – IV	3	0	3	**15**
		Elective 5 (3+0 or 2+1)	–	–	3	
		Elective 6 (3+0 or 2+1)	–	–	3	
		Total Credit Hours				**133**

BS(CS) Elective Courses

Course Code	Course Title	Pre-requisite Course
CSC 484	Content Management	NONE
CSL 484	Content Management Lab	NONE
SEN 422	Semantic Computing	NONE
SEN 421	Semantic Web	NONE
CSC 466	Introduction to Biometrics	NONE
CSL 466	Introduction to Biometrics Lab	NONE
SEN 455	Knowledge Based Management System	NONE
CSC 458	Management Information System	NONE
CEN 321	Microprocessor & Interfacing	–
CEL 321	Microprocessor & Interfacing Lab	–
SEN 493	Multimedia Systems	NONE
SEL 493	Multimedia Systems Lab	NONE
CSC 449	Neural Networks & Fuzzy Logic	NONE
CEN 458	Robotics	NONE
CEL 458	Robotics Lab	NONE
ITC 457	Knowledge Management System & Technologies	NONE
SEN 427	Information Systems Auditing and Assurance	NONE
CSC 456	Distributed Computing	Operating Systems
CSL 456	Distributed Computing Lab	Operating Systems
CEN 444	Digital Image Processing	NONE
CEL 444	Digital Image Processing Lab	NONE
CSC 486	Geographical Information System	NONE

Course Code	Course Title	Pre-requisite
CSL 486	Geographical Information System Lab	NONE
CSC 441	Natural Language Processing	NONE
SEN 310	Web Engineering	–
SEL 310	Web Engineering Lab	–
CSC 452	Data Mining	Database Management Systems
CSC 454	Data Warehousing	Database Management Systems
CSC 411	Artificial Intelligence	Discrete Structures
CEN 451	Data Encryption and Security	NONE
SEN 456	Usability Engineering	NONE

BS Information Technology (4 Years)

Campus: Islamabad, Karachi & Lahore

Regular Programme Duration: 4 Years (8 Semesters)

Programme Timing: Morning

Eligibility Criteria:

- Minimum 50% marks in Intermediate (HSSC) Examination (Pre-Medical/ Pre-Engg.) or equivalent qualification with Mathematics certified by IBCC.
- Pre-Medical students must pass deficiency courses of Mathematics of 6 credit hours within one year

ROADMAP

Semester 1

Pre-requisite	Course Code	Course Title	Lec	Lab	CR	CR/Sem
None	CSC 114	Introduction to Information & Communication Technology	2	0	2	16
None	CSL 114	Introduction to Information & Communication Technology Lab	0	1	1	
None	CSC 113	Computer Programming	3	0	3	
None	CSL 113	Computer Programming Lab	0	1	1	
None	ENG 105	Functional English	3	0	3	
None	GSC 110	Applied Calculus & Analytical Geometry	3	0	3	
None	GSC 114	Applied Physics	2	0	2	
None	GSL 114	Applied Physics Lab	0	1	1	

Semester 2

Pre-requisite	Course Code	Course Title	Lec	Lab	CR	CR/Sem
CSC 113	CSC 210	Object Oriented Programming	3	0	3	16
CSC 113	CSL 210	Object Oriented Programming Lab	0	1	1	
ENG 105	HSS 120	Communication Skills	3	0	3	
None	GSC 221	Discrete Mathematics	3	0	3	
		University Elective – I	3	0	3	
GSC 114	CEN 122	Digital Design	2	0	2	
GSC 114	CEL 122	Digital Design Lab	0	1	1	

Semester 3

Pre-requisite	Course Code	Course Title	Lec	Lab	CR	CR/Sem
CSC 113	CSC 221	Data Structures & Algorithms	3	0	3	
CSC 113	CSL 221	Data Structure & Algorithms Lab	0	1	1	
None	CEN 222	Data Communication and Networking	3	0	3	
None	CEL 222	Data Communication and Networking	0	1	1	17
None	CSC 307	Professional Practices	3	0	3	
None	GSC 121	Linear Algebra	3	0	3	
None	GSC 122	Probability & Statistics	3	0	3	

Semester 4

Pre-requisite	Course Code	Course Title	Lec	Lab	CR	CR/Sem
CSC 221	CSC 320	Operating Systems	3	0	3	
CSC 221	CSL 320	Operating Systems Lab	0	1	1	
None	CSC 407	Information Security	3	0	3	
None	CSC 220	Database Management Systems	3	0	3	17
None	CSL 220	Database Management Systems Lab	0	1	1	
None	SEN 220	Software Engineering	3	0	3	
		University Elective-II	3	0	3	

Semester 5

Pre-requisite	Course Code	Course Title	Lec	Lab	CR	CR/Sem
SEN 220	ITC 311	IT Project Management	3	0	3	
CEN 222	ITC 312	System and Network Administration	3	0	3	
CEN 222	ITL 312	System and Network Administration Lab	0	1	1	
None	ITC 226	Web Systems & Technologies	2	0	2	16
None	ITL 226	Web Systems & Technologies	0	1	1	
SEN 220	SEN 458	Software Requirement Engineering	3	0	3	
		University Elective – III	3	0	3	

Semester 6

Pre-requisite	Course Code	Course Title	Lec	Lab	CR	CR/Sem
CSC 220	ITC 321	Enterprise Systems	3	0	3	
None	ITC 324	IT Infrastructure	3	0	3	
HSS 120	HSS 320	Technical Writing & presentation skills	3	0	3	18
		University Elective – IV	3	0	3	
		Elective 1 (3+0 or 2+1)	–	–	3	
		Elective 2 (3+0 or 2+1)	–	–	3	

Summer:

Pre-requisite	Course code	Course Title	Lec	Lab	CR	CR/Sem
		Internship	0	0	0	0

Semester 7

Pre-requisite	Course Code	Course Title	Lec	Lab	CR	CR/Sem
CEN 222	ITC 411	Cyber Security	3	0	3	18
None	PAK 101	Pakistan Studies	2	0	2	
CSC 220	ITC 424	Database Administration and Management	3	0	3	
CSC 220	ITC 424	Database Administration and Management Lab		1	1	
None	ESC 498	Project – I	0	3	3	
		Elective 3 (3+0 or 2+1)	–	–	3	
		Elective 4 (3+0 or 2+1)	–	–	3	

Semester 8

Pre-requisite	Course Code	Course Title	Lec	Lab	CR	CR/Sem
None	ESC 499	Project II	0	3	3	15
CSC 320	ITC422	Virtual Systems and Services	3	0	3	
CSC 320	ITL 422	Virtual Systems and Services Lab	0	1	1	
None	ISL 101	Islamic Studies	2	0	2	
		Elective 5 (3+0 or 2+1)	–	–	3	
		Elective 6 (3+0 or 2+1)	–	–	3	

BS(IT) Elective Courses

Course Code	Course Title	Pre-requisite Course
CSC 484	Content Management	NONE
CSL 484	Content Management Lab	NONE
SEN 422	Semantic Computing	NONE
SEN 421	Semantic Web	NONE
CSC 466	Introduction to Biometrics	NONE
CSL 466	Introduction to Biometrics Lab	NONE
SEN 455	Knowledge Based Management System	NONE
CSC 458	Management Information System	NONE
CEN 321	Microprocessor & Interfacing	–
CEL 321	Microprocessor & Interfacing Lab	–
SEN 493	Multimedia Systems	NONE
SEL 493	Multimedia Systems Lab	NONE
CSC 449	Neural Networks & Fuzzy Logic	NONE
CEN 458	Robotics	NONE
CEL 458	Robotics Lab	NONE

ITC 457	Knowledge Management System & Technologies	NONE
SEN 427	Information Systems Auditing and Assurance	NONE
CSC 456	Distributed Computing	Operating Systems
CSL 456	Distributed Computing Lab	Operating Systems
CEN 444	Digital Image Processing	NONE
CEL 444	Digital Image Processing Lab	NONE
CSC 486	Geographical Information System	NONE
CSL 486	Geographical Information System Lab	NONE
CSC 441	Natural Language Processing	NONE
SEN 310	Web Engineering	–
SEL 310	Web Engineering Lab	–
CSC 452	Data Mining	Database Management Systems
CSC 454	Data Warehousing	Database Management Systems
CSC 411	Artificial Intelligence	Discrete Structures

CEN 451	Data Encryption and Security	NONE
SEN 456	Usability Engineering	NONE

MS - Computer Science (2 Years)

Campus: Islamabad, Karachi & Lahore

Program Duration: 2 Years (4 Semesters)
Program Timing: Evening

Eligibility Criteria: HEC recognized 4 years Bachelor degree in CS/SE/CE/EE/IT or equivalent or MCS/MIT with CGPA 2.5/4.0 (Semester System) or 50% marks (Annual System). NTS-GAT (General) /Gre/ University entry test passed with 50% marks. Additionally, applicants must provide HEC verification of all academic certificates / degrees.

Deficiency Course:
1. Computer Programming
2. Analysis of Algorithms
3. Computer Architecture
4. Operating Systems
5. Theory of Automata

ROADMAP

Semester 1

Course Code	Course Title	Credits
CSC 503	Advanced Theory of Computation	3
CSC 521	Advanced Design and Analysis of Algorithms	3
ESC 701	Research Methodology (University Requirement)	3
	Total	**9**

Semester 2

Course Code	Course Title	Credits
CSC 720	Advanced Operating Systems	3
CEN 720	Advanced Computer Architecture	3
	Elective I	3
	Total	**9**

Semester 3

Course Code	Course Title	Credits
	Elective II	3
	Elective III	3
	Thesis I / Elective IV	3
	Total	**9**

Semester 4

Course Code	Course Title	Credits
	Thesis II / Elective V	**3**
	Total	**3**
Total Program Credits		**30**

ELECTIVE COURSES – MS-CS Program

Course Codes	Course Names	Credits
CSC 504	Ubiquitous Computing	3
CSC 505	Intelligent User Interface Design and Evaluation	3
CSC 515	Virtual Reality	3
CSC 516	Game Theory	3
CSC 701	Computer Supported Cooperative Work	3
SEN 720	Advanced Human Computer Interaction	3
SEN 756	Advanced Usability Engineering	3
CSC 518	Decision Support Systems	3
CSC 715	Intelligent Agents	3
CSC 719	Machine Learning	3
DSC 707	Deep Learning	3
CSC 741	Advanced Natural Language Processing	3
CEN 745	Advanced Digital Image Processing	3
CSC 749	Advanced Neural Networks and Fuzzy Logic	3
CSC 751	Pattern Recognition	3
CSC 764	Computer Vision	3

CSC 750	Intelligent Tutoring Systems	3
EET 519	Distributed Networking	3
EET 520	Network Administration and Management	3
EET 556	Mobile Communications and Networking	3
EET 702	Advanced Network Security	3
EET 713	Advanced Network Design	3
EET 716	Advanced Topics in Wireless Networking and Communications	3
EET 718	Network Performance Evaluation	3
EET 761	Network Protocols and Standards	3
CSC 781	Cloud Computing	3
CSC 553	Advanced Information Theory	3
CSC 746	Advanced Data Mining	3
CSC 747	Text Mining	3
CSC 752	Advanced DBMS	3
CSC 753	Distributed Databases	3
CSC 754	Object Oriented Databases	3
CSC 755	Web based DBMS	3
CSC 756	Multimedia Databases	3
CSC 760	Advanced Data Warehousing	3
CSC 514	Information Retrieval Techniques	3
CSC 764	Ontology Engineering	3
CSC 761	Semantic Web	3

MS- Data Science (2 Years)

Campus: Islamabad

Program Duration: 2 Years (4 Semesters)

Program Timing: Evening

Eligibility Criteria: HEC recognized 4 years Bachelor degree in CS/SE/CE/EE/IT/ Statistics/Mathematics or equivalent with CGPA 2.5/4.0 (Semester System) or 50%

marks (Annual System). **OR**

MIT/MCS/M.Sc. (Computer Science) / MPhil Mathematics/ Mphil Statistics or equivalent with CGPA 2.5/4.0 (Semester System) or 50% marks (Annual System).

NTS GAT (General)/ GRE/ University entry test passed with 50% marks.

Specialization:

1. Programming Fundamentals
2. Data Structures & Algorithms OR Design & Analysis of Algorithms
3. Database Systems

Student selected for admission having deficiency in the above stated courses shall be required to study the courses, which must be passed in the first two semesters. Deficiency courses shall be determined by the Departmental Selection Committee, before admitting the student. A student cannot register in MS courses, unless all specified deficiency courses have been passed. Deficiency course shall be offered with undergraduate students and per credit hour fee of undergraduate program shall be applied.

ROADMAP

Semester 1

Course Code	Course Title	Credit Hours
DSC 500	Tools and Techniques in Data Science	03
DSC 501	Statistical and Mathematical Methods for Data Analysis	03
ESC 701	Research Methodology	03
	Total	**09**

Semester 2

Course Code	Course Title	Credit Hours
DSC 700	Big Data Analytics	03
CSC 719	Machine Learning	03
	Elective I	03
	Total	**09**

Semester 3

Course Code	Course Title	Credit Hours
DSC 707	Deep Learning	03
	Elective II	03
	Thesis I / Elective – III	03
	Total	09

Semester 4

Course Code	Course Title	Credit Hours
	Thesis II / Elective – IV	03
	Total	03
	TOTAL CREDIT HOURS	**30**

Elective Courses – MS Data Science

Course Code	Course Title	Credit Hours
DSC 703	Data Visualization	3
DSC 704	Distributed Data Engineering	3
DSC 706	Unstructured Data Processing	3
CSC 518	Decision Support Systems	3
CSC 715	Intelligent Agents	3
CSC 741	Advanced Natural Language Processing	3
CEN 745	Advanced Digital Image Processing	3
CSC 749	Advanced Neural Networks and Fuzzy Logic	3
CSC 751	Pattern Recognition	3
CSC 764	Computer Vision	3
CSC 781	Cloud Computing	3
CSC 554	Advanced Information Theory	3
CSC 747	Text Mining	3
CSC 752	Advanced DBMS	3
CSC 760	Advanced Data Warehousing	3
SEN 764	Ontology Engineering	3

MS - Information Security (2 Years)

Campus: Islamabad
Program Timing: Evening
Regular Program Duration: 2 Years (4 Semesters)
Eligibility Criteria:
4 years degree in BSIS/BSE/BEE/BET/BSCS/CE/IT/Electronics/Equivalent with minimum 130 Cr Hrs and CGPA 2.5/4.0 (Semester System) or 50% marks (Annual System) or MCS/M.Sc (Computer Science) with minimum CGPA 2.5/4.0 or 50% marks in annual system. NTS-GAT (General)/ GRE (General)/University entry test, passed with 50% marks. Additionally, applicants must provide HEC verification of all academic certificates / degrees.

ROADMAP

Semester 1

Course Code	Course Title	Credit Hours
ISC 511	Number Theory	03
CSC 521	Advanced Design and Analysis of Algorithms	03
ISC 512	Computer and Network Security	03
	Total	**09**

Semester 2

Course Code	Course Title	Credit Hours
Elective Code	Elective I	03
CSC 704	Advanced Cryptography	03
ESC 701	Research Methodology	03
	Total	**09**

Semester 3

Course Code	Course Title	Credit Hours
Elective Code	Elective II	03
ESC 500 / Elective Code	Thesis I / Elective III	03
Elective Code	Elective IV	03
	Total	**09**

Semester 4

Course Code	Course Title	Credit Hours
ESC 500 / Elective Code	Thesis II / Elective V	03
	Total	03
	TOTAL CREDIT HOURS	**30**

Elective Courses

Course Code	Course Title	Credit Hours
ESC 500	Thesis	06
EEN 510	Stochastic Process	03
EET 519	Distributed Networking	03
EET 520	Network Administration and Management	03
EET 553	Information theory and coding	03
EET 556	Mobile Communication and Networking	03
ISC 732	Advance Computer Security	03
ISC 733	Information Hiding	03
ISC 734	Wireless Network Security	03
ISC 735	Cloud Computing Security	03
ISC 736	Cyber Warfare	03
ISC 737	Computer and Network Forensics	03
ISC 738	Ethical Hacking	03
ISC 739	Cyber Crimes and Laws	03
ISC 740	Quantum Cryptography	03
ISC 747	Advanced Cryptanalysis	03
ISC 741	Algebraic Cryptanalysis	03
ISC 742	Intrusion Detection and Prevention	03
ISC 743	Penetration Testing and Vulnerability Analysis	03
EET 710	Advanced Computer Networks	03
CSC 720	Advanced Operating Systems	03

ISC 731	Information Security Management	03
ISC 748	Blockchain Technology	03

MS – Maths (2 Years)

Campus: Islamabad
Regular Program Duration: 2 Years (4 Semesters)
Available Specialization:
Information Management
Computer Networks
Artificial Intelligence
Human Computer Interaction
Program Timing: Evening
Entry Requirements:
4 years Bachelor degree in BS (M a t h e m a ti c s / M . S c (Mathematics) or equivalent, with minimum 130 Credit Hours and CGPA 2.5/4.0 (Semester System) or 50% marks (Annual System). NTS-GAT (General) or GRE passed with 50% marks.
Additionally, applicants must provide HEC verification of all academic certificates / degrees.

ROADMAP

Semester 1

Course Code	Course Code	Course Code
MAT-	Core-I	03
MAT-	Core-II	03
MAT-	Core-III	03
	Total	09

Semester 2

Course Code	Course Title	Credit Hours
MAT-	Core-IV	03
ESC-	Research Methodology (University requirement)	03
MAT-	Elective I	03
	Total	09

Semester 3

Course Code	Course Title	Credit Hours
MAT-	Elective-II	03
MAT-500	Thesis	03
	Total	06

Semester 4

Course Code	Course Title	Credit Hours
MAT-	Elective – III	03
MAT-500	Thesis	03
	Total	06
	TOTAL CREDIT HOURS	**30**

List of Core Courses

Course Code	Course Title	Credit Hours
MAT-710	Advanced Partial Differential Equations	03
MAT-711	Advanced Functional Analysis	03
MAT-713	Advanced Group Theory	03
MAT-610	Mathematical Techniques for Boundary Value Problems	03
MAT-511	Integral Equations and Applications	03
MAT-727	Riemannian Geometry	03
MAT-728	ODEs and Computational Linear Algebra	03
MAT-729	Advanced Mathematical Physics	03
MAT-500	Thesis	06

University Requirement Course

ESC-501	Research Methodology	03

List of Elective Courses

MAT-510	Fluids Dynamics-I	03
MAT-512	Fixed Point Theory	03
MAT-513	Number Theory	03

MAT-514	Spectral Theory in Hilbert Spaces	03
MAT-611	Topological Vector Spaces	03
MAT-712	Numerical Solution of Partial differential Equations	03
MAT-714	Non-Newtonian Fluid	03
MAT-715	Perturbation Methods	03
MAT-716	Finite Element Method	03
MAT-717	Near Rings	03
MAT-718	Fuzzy Logic/Fuzzy Algebra	03
MAT-719	Advanced Ring Theory	03
MAT-720	Topological Algebras	03
MAT-721	Commutative Semi Group Rings	03
MAT-722	General Relativity	03
MAT-723	Advanced Analytical Dynamics	03
MAT-724	Heat and Mass Transfer	03
MAT-730	Numerical Optimization	03
MAT-731	Advanced Cryptography	03
MAT-732	Probability Models and Applications	03
MAT-733	Advanced Modern Algebra with Applications	03
MAT-734	Spectral Methods in Fluid Dynamics	03
MAT-735	Simple Linear Regression Models	03
MAT-736	Lattice Boltzmann Method	03
MAT-737	Fluids Dynamics-II	03

MS- Telecom & Networking (2 Years)

Campuses: Islamabad, Karachi

Regular Program Duration: 2 Years (4 Semesters)

Program Timing: Evening

Eligibility Criteria:

Four Year degree as BS/ BCE/ BSE/ BE/ BSC (Hons.) in Computer Sciences/Software Engineering/Computer Engineering/ Information Technology is required. A minimum of 130 credit hours in Bachelors and a CGPA of 2.5/4.0 or 50%Marks in annual system or MCS/M.Sc. (Computer Science) with minimum CGPA 2.5/4.0 or 50% marks in annual system. NTS GAT/GRE (General)/ University Test passed with 50% marks. Additionally, applicants must provide HEC verification of all academic certificates/ degrees.

ROADMAP

Semester 1

Course Code	Course Title	Credits
ESC 701	Research Methodology	3
EET 511	Digital Communication Systems	3
EET 520	Network Administration and Management	3
	Total	**9**

Semester 2

ISC 512	Computer and Network Security	3
EET 556	Mobile Communications and Networking	3
	Elective-I	3
	Total	**9**

Semester 3

EET 519	Distributed Networking	3
	Elective-II	3
ESC 502/Elective Code	Thesis/Elective-III	3
	Total	**9**

Semester 4

ESC 502(Continued)/ Elective Code	Thesis/Elective-IV	3
	Total	**30**

List of Courses

Course Code	Course Title	Credits
ISC 512	Computer and Network Security	3
EET 556	Mobile Communications and Networking	3
EET 511	Digital Communication Systems	3
EET 519	Distributed Networking	3
EET 520	Network Administration and Management	3

University Requirement

ESC 701	Research Methodology	3

Electives

ESC 502	Thesis	3+3
EET 710	Advanced Computer Networks	3
EET 523	Communication System Analysis and Design	3
EET 549	Advanced Satellite Communication	3
EET 560	Telecommunication Network Management	3
EET 703	DSP Application in Telecommunication	3
EET 705	Broadband Technologies and Components	3

EET 706	Advanced Optical Fiber Networks	3
EET 707	Telecommunications Business Environment	3
EET 717	Network Planning and Evaluation	3
EET 751	Antenna and Microwave Engineering	3
EET 553	Information Theory and Coding	3
EET 756	Telecommunication Switching Systems	3
EET 765	Radio Frequency Engineering	3
CSC 704	Advanced Cryptography	3
CSC 708	Advanced Simulation and Modeling	3
CSC 709	Detection and Estimation Theory	3
CSC 757	IP Multimedia System	3
EET 702	Advanced Network Security	3
SEC 604	Blockchain Technology	3
EET 752	IoT Architecture and Protocols	3
EET 753	Privacy and Security in IoT	3

PhD – Computer Science (3 Years)

Campus: Islamabad & Karachi

Program Duration: 3 Years (6 Semesters)
Available Specialization
Information Management
Computer Networks
Artificial Intelligence
Human Computer Interaction

Program Timing: Evening

Eligibility Criteria:

18 years of education minimum 60% or 3 CGPA in relevant discipline GRE/ GAT (Subject with 60%). NTS – GAT / GRE(General)/ University entry test passed with 50% marks. Additionally, applicants must provide HEC verification of all academic certificates/ degrees.

ROADMAP

Semester 1

Course Code	Title	Credit Hours	CORE/ELECTIVE
ESC-702	Research Methods in PhD Studies	3	CORE
Elective Code	Elective-1	3	ELECTIVE
Elective Code	Elective-II	3	ELECTIVE

Semester 2

Course Code	Title	Credit Hours	CORE/ELECTIVE
Elective Code	Elective-III	3	Elective
Elective Code	Elective-IV	3	Elective
Elective Code	Elective-V	3	Elective

Semester 3

Course Code	Title	Credit Hours	CORE/ELECTIVE
EEN-901	Comprehensive Exam	0	CORE
EEN-902	Supervised Research (PhD Thesis) including defense and acceptance of research proposal	9	CORE

Semester 4

Course Code	Title	Credit Hours	CORE/ELECTIVE
EEN-902	Supervised Research (PhD Thesis)	9	CORE

Semester 5

Course Code	Title	Credit Hours	CORE/ELECTIVE
EEN-902	Supervised Research (PhD Thesis)	9	CORE

Semester 6

Course Code	Title	Credit Hours	CORE/ELECTIVE
EEN-902	Supervised Research (PhD Thesis)	9	CORE

List of Electives

(Artificial Intelligence)

Course	Title of Course	Cr. Hrs.
CSC 711	Advanced Artificial Intelligence	3
CSC-719	Machine Learning	3
CSC-741	Advanced Natural Language Processing	3
CEN-745	Advanced Digital Image Processing	3
CSC-751	Pattern Recognition	3
CSC-764	Computer Vision	3
CSC 765	Bio Medical Image Analysis	3
CSC-750	Intelligent Tutoring Systems	3
CSC-715	Intelligent Agents	3

CSC 744	Advanced Computer Graphics	3

(Data Science)

DSC-701	Big Data Analytics	3
DSC-702	Machine Learning and Data Analysis	3
DSC-703	Data Visualization	3
DSC-704	Distributed Data Engineering	3
DSC-705	Deep Learning and Data Analysis	3
DSC-706	Unstructured Data Processing	3
CSC-746	Advanced Data Mining	3
CSC-747	Text Mining	3

(Networks & Security)

EET-710	Advanced Computer Networks	3
EET-702	Advanced Network Security	3
EET-713	Advanced Network Design	3
EET-716	Advanced Topics in Wireless Networking and	3

(Communications)

EET-718	Network Performance Evaluation	3

(Databases & Web Systems)

CSC-720	Advanced Operating Systems	3
CSC 758	Parallel Processing	3
CEN 707	Advanced Distributed Systems	3
CSC-752	Advanced DBMS	3
CSC-753	Distributed Databases	3
CSC-754	Object Oriented Databases	3
CSC-755	Web based DBMS	3
CSC-756	Multimedia Databases	3
CSC-760	Advanced Data Warehousing	3
CSC-781	Cloud Computing	3
SEN 761	Semantic Web	3

SEN 764	Ontology Engineering	3
CSC-757	IP Multimedia System	3
SEN 754	Advanced Web Computing System and Application	3

PhD – Maths (3 Years)

Campus: Islamabad
Program Duration: 3 years (6 Semesters)
Program Timing: Evening

Eligibility Criteria:

18 year of education in Mathematics or relevant discipline from an HEC recognized university with a minimum CGPA of 3.00/4.00 (semester system) or 60% marks (annual system). GAT (Computer Science)/GRE (Computer Science) with minimum 60% marks, or University Based Subject Test passed with minimum 70% marks. Additionally, applicants must provide HEC verification of all academic certificates / degrees.

ROADMAP

Semester 1

Course Code	Course Title	Credit Hours
ESC-702	Research Methods in PhD Studies	3
	Elective-I	3
	Elective-II	3
		9

Semester 2

ESC-702	Elective-III	3
	Elective-IV	3
	Elective-II	3
	Total Credit hours for 2ⁿᵈ Semester	**9**

Semester 3

	Comprehensive Exam	0
MAT-700	Supervised Research (PhD Thesis) including defense and acceptance of research proposal	9
	Total credit hours for 3rd semester	9

Semester 4

MAT-700	Supervised Research (PhD Thesis) including design and implementation of proposed solution	9
	Total credit hours for 4th semester	9

Semester 5

MAT-700	Supervised Research (PhD Thesis) including analysis of results and thesis write-up	9
	Total credit hours for 5th semester	9

Semester 6

MAT-700	Supervised Research (PhD Thesis) –Submission of the final thesis for evaluation.	9
	Total credit hours for 6th semester	9
	Total credit hours for Ph.D. Program	54

Thesis

1	MAT-710	Thesis	**3**

List of Elective Courses

MAT-710	Advanced Partial Differential Equations	3
MAT-711	Advanced Functional Analysis	3
MAT-712	Numerical Solution of Partial differential Equations	3
MAT-712	Advanced Group Theory	3
MAT-714	Non-Newtonian Fluid	3
MAT-715	Perturbation Methods	3
MAT-716	Finite Element Method	3

MAT-717	Near Rings	3
MAT-718	Fuzzy Logic/Fuzzy Algebra	3
MAT-719	Advanced Ring Theory	3
MAT-720	Topological Algebras	3
MAT-721	Commutative Semigroup Rings	3
MAT-722	General Relativity	3
MAT-723	Advanced Analytical Dynamics	3
MAT-724	Heat and Mass Transfer	3
MAT-725	Advanced Mathematical Techniques for Boundary Value Problems	3
MAT-726	Advanced Integral Equations and Applications	3
MAT-727	Riemannian Geometry	3
MAT-728	ODEs and Computational Linear Algebra	3
MAT-729	Advanced Mathematical Physics	3
MAT-730	Numerical Optimization	3
MAT-731	Advanced Cryptography	3
MAT-732	Probability Models and Applications	3
MAT-733	Advanced Modern Algebra with Applications	3
MAT-734	Spectral Methods in Fluid Dynamics	3
MAT-735	Simple Linear Regression Models	3
MAT 736	Lattice Boltzmann Method	3
MAT-737	Fluid Dynamics-II	3
MAT-810	Advanced Elastodynamics	3
MAT-811	Modelling and Simulation of Dynamical Systems	3
MAT-812	Advanced Finite Element Analysis	3
MAT- 813	Advanced Multivariate Methods and Analysis	3
MAT-814	Advanced Near Rings	3
MAT-815	Advanced Quantum Theory	3
MAT-816	Advanced Semigroup Theory	3
MAT-817	Nonlinear Waves	3

Bahria University Health Science (BUHS) Campus

MPHIL IN BIOCHEMISTRY

Campus: BUM&DC
Program Timing: Morning
Duration: 2 years
Eligibility Criteria:

16 years of education with MBBS/BDS/MSc Biochemistry/BS Biochemistry from PMC/HEC

recognized university institute 'with minimum CGPA 2.5/4.0 OR 507" marks where CGPA is not given.

Completion of one year house job at PMC recognized institution.

Valid PMDC/PMC registration certificate.

HEC attestation on candidate's local degree and cumulative transcript (at the back of original

degree & transcript) Two years teaching experience in the relevant subject will be given preference.

NB: All mentioned certificates duly attested by HEC to be produced at the time of interview

otherwise candidate will become ineligible for selection process.

INTRODUCTION
The Master of Philosophy (MPhil) degree program of Biochemistry at Bahria University Medical & Dental College aims to prepare postgraduates in health professional educational institutions, particularly in areas of basic health science teaching &research. This will promote faculty development in basic health sciences education, and provide opportunity for junior health sciences faculty including Bahria University Medical & Dental College (BUMDC) to enhance their professional career as a teacher and researcher in the field of basic health sciences.

Objectives of the Program:
At the end of program the MPhil graduate should be able to:
a. Demonstrate professional attitudes and ethical values to fulfill social and professional responsibility to community.
b. Apply critical inquiry for promotion of evidence based theoretical knowledge to practice.
c. Analyze the research skills including analytical, synthesis, application, implementation, quality and implications.
d. Work as a responsible, dedicated, effective teacher and keen researcher independently.
e. Display interpersonal skills including communication with experts, self-critic, social skills, team work etc.
f. Perform life-long learning skills by accepting one's limitations to knowledge and with an urge to continuously update the knowledge.
g. Present research results in national / international scientific forums and publish in journals.

Outcomes of the Program:
The program is committed to produce:
a. Teachers and researchers equipped with professional attitudes and ethical values to fulfill social and professional responsibility to community.
b. Professionals inculcated with application of critical inquiry for promotion of evidence based theoretical knowledge for practice.
c. Graduates equipped with analytical, synthesis, application implementation, quality, implications etc. skills
d. Responsible, effective teachers and researchers in basic health sciences with ability to work independently
e. Interpersonal skills in professionals including communication with experts, self-critical, social skills, team work etc.
f. Life-long learning skills in professionals by accepting one's limitations to knowledge and urge to continuously update the knowledge.
g. Good presenters of research results in national / international scientific forums along with publications in journals.

BIOCHEMISTRY PROGRAM CORE COURSES

1. MED-701: Research Methodology, Biostatistics & Epidemiology
2. MED-712: Medical Biology &Genetic
3. MED-713: Medical Education, Ethics & Writing
4. MED-714: Instruments and Animal use in research
5. MED-715,716&717: Journal Club
6. MED-718,719&720: Teaching internship
7. THS-700 & 701: Thesis I (THS 700) & II (THS 701)
8. BIO 750: General metabolism and biological oxidation
9. BIO 751: Clinical biochemistry and heme metabolism

BIOCHEMISTRY PROGRAM ELECTIVE COURSES

1. BIO 752: Chemical basis of life,Diet and Nutrition
2. BIO 753: Endocrinology
3. BIO 754: Water, electrolyte balance and imbalance
4. BIO 755: Enzymology and vitamins
5. BIO 756: Acid base disorders
6. BIO 757: Biochemistry of cancer
7. BIO 758: Mineral and detoxification

MPHIL BIOCHEMISTRY PROGRAM ROADMAP

Semester 1

Sr. #	Course Code	Course Title	Credit Hours	Theory	Practical
1	MED 701	Research Methodology (University Requirement)	3+0	3	0
2	MED 712	Medical Biology & Genetics	2+0	2	0
3	MED 713	Medical Education, Ethics & Writing	2+0	2	0
4	MED 714	Instruments and Animal use in research	2(1+1)	1	1
5	MED 715	Journal Club (Essential)-1	No credit hour	0	0
6	MED 718	Teaching Internship (Essential)-1	No credit hour	0	0
Total Credit Hours in Semester-1			**09**	**08**	**01**

Semester 2

Sr. #	Course Code	Course Title	Credit Hours	Theory	Practical
1	BIO 750	General metabolism and biological oxidation	3+0	3	0
2	BIO 751	Clinical biochemistry and heme metabolism	3(2+1)	2	1
3	XXX XXX/ XXX XXX	Elective -I	3+0	3	0
4	MED 716	Journal Club (Essential)-2	No credit hour	0	0
5	MED 719	Teaching Internship (Essential)-2	No credit hour	0	0
Total Credit Hours in Semester-2			**09**	**8**	**1**

Semester 3

Sr. #	Course Code	Course Title	Credit Hours	Theory	Practical
1	XXX XXX/	Elective-II	3+0	3	0
2	XXX XXX/	Elective-III	3+0	3	0
3	THS 700	Thesis-I	3+0	3	0
4	MED 717	Journal Club (Essential)-3	No credit hour	0	0
5	MED 720	Teaching Internship (Essential)-3	No credit hour	0	0
Total Credit Hours in Semester-3			**09**	**09**	**0**

Semester 4

Sr. #	Course Code	Course Title	Credit Hours	Theory	Practical
1	THS 701	Thesis-II	3+0	3	0
		Total	3+0	3	0
Total Credit Hours in Semester-4			**3**	**3**	**0**

LIST OF ELECTIVE COURSES

Sr.No.	Course Code	Course Title	Credit Hours	Theory	Practical
1.	PHY 762	Physiology of Health, Fitness& Exercise	3+0	3	0
2.	PHY 763	Heme & Immune system	3+0	3	0
3.	PHY 764	Gastrointestinal Physiology	3+0	3	0
4.	PHY 765	Neurophysiology and special senses	3+0	3	0
5.	PHY 766	Renal Physiology	3+0	3	0
6.	PHY 767	Endocrine and Reproductive Physiology	3+0	3	0
7.	PHY 768	Electrophysiology	3(1+2)	1	2

MPhil Physiology

Campus: BUM&DC
Program Timing: Morning
Duration: 2 years
Eligibility Criteria: 16 years of education with MBBS/BDS/MSc Biochemistry/BS Biochemistry from PMC/HEC
recognized university institute 'with minimum CGPA 2.5/4.0 OR 507" marks where CGPA is not
given.
Completion of one-year house job at PMC recognized institution.
Valid PMDC/PMC registration certificate.
HEC attestation on candidate's local degree and cumulative transcript (at the back of original degree & transcript) Two years teaching experience in the relevant subject will be given preference.
NB: All mentioned certificates duly attested by HEC to be produced at the time of interview
otherwise candidate will become ineligible for selection process.

INTRODUCTION

The Master of Philosophy (MPhil) degree program of Physiology at Bahria University Medical & Dental College aims to prepare post-graduation health professional educational institutions particularly in areas of basic health science teaching &research. This will promote faculty development in basic health sciences education, and provide opportunity for junior health sciences faculty including Bahria University Medical & Dental College (BUMDC)to enhance their professional career as a teacher and researcher in the field of basic health sciences.

MPHIL -PHYSIOLOGY PROGRAM - ROADMAP

SEMESTER- 1

Sr.No	Course Code	Course Title	Credit Hours	Theory	Practical
1	MED 701	Research Methodology	3+0	3	0
2	MED 712	Medical Biology & Genetics	2+0	2	0
3	MED 713	Medical Education, Ethics & Writing	2+0	2	0
4	MED 714	Instruments & Animal use in research	2(1+1)	1	1
5	MED 715	Journal Club (Essential)-1	No credit hour	0	0
6	MED 718	Teaching Internship (Essential)-1	No credit hour	0	0
		Total Credit Hours in Semester-1	**09**	**08**	**1**

SEMESTER- 2

Sr.No	Course Code	Course Title	Credit Hours	Theory	Practical
1	PHY 760	General ,Neuromuscular and Blood Physiology	3+0	3	0
2	PHY 761	Cardiorespiratory Physiology	3(2+1)	2	1
3	XXXXX	Elective -I	3+0	3	0
4	MED 716	Journal Club (Essential)-2	No credit hour	0	0
5	MED 719	Teaching Internship (Essential)-2	No credit hour	0	0
		Total Credit Hours in Semester-2	**09**	**08**	**1**

SEMESTER- 3

Sr.No	Course Code	Course Title	Credit Hours	Theory	Practical
1	XXXX	Elective-II	3+0	3	0
2	XXXXX	Elective-III	3+0	3	0
3	THS 700	Thesis-I	3+0	3	0
4	MED 717	Journal Club (Essential)-3	No credit hour	0	0
5	MED 720	Teaching Internship (Essential)-3	No credit hour	0	0
		Total Credit Hours in Semester-3	**09**	**09**	**0**

SEMESTER -4

Sr.No.	Course Code	Course Title	Credit Hours	Theory	Practical
1	THS 701	Thesis-II	3+0	3	0
		Total	**3**	**3**	**0**
		Total Credit Hours in Semester-4	**3**	**3**	**0**

LIST OF ELECTIVE COURSES

Sr.No.	Course Code	Course Title	Credit Hours	Theory	Practical
1.	PHY 762	Physiology of Health, Fitness& Exercise	3+0	3	0
2.	PHY 763	Heme & Immune system	3+0	3	0
3.	PHY 764	Gastrointestinal Physiology	3+0	3	0
4.	PHY 765	Neurophysiology and special senses	3+0	3	0
5.	PHY 766	Renal Physiology	3+0	3	0
6.	PHY 767	Endocrine and Reproductive Physiology	3+0	3	0
7.	PHY 768	Electrophysiology	3(1+2)	1	2

M.Phil Antomy

Eligibility criteria of all offered programs by school

Eligibility Criteria:
Academic Qualifications
- 16 years of education with MBBS/BDS from PMC/HEC recognized university institute with minimum CGPA 2.5/4.0 OR 50% marks where CGPA is not given.
- Completion of one year house job at PMC recognized institution.
- Valid PMDC/PMC registration certificate.
- HEC attestation on candidate's local degree and cumulative transcript (at the back of original degree & transcript)
- Two years teaching experience in the relevant subject will be given preference.

NB: All mentioned certificates duly attested by HEC to be produced at the time of interview otherwise candidate will become ineligible for selection process.

A. Program Timings and specializations
- 2 Years
- MPhil-Anatomy

General Objectives of Our Degree Programs:
a) To promote faculty development in higher education that will strengthen basic science teaching and research in medical professional institutionsincluding BUMDC
b) To encourage a culture of critical inquiry for promotion of evidence-based teaching andresearch
c) To conduct original research under supervision d) To value progress of science on the basis of evidence
e) To appreciate ethical and moral values
f) To present the results of research in national and international scientific forums
g) To publish research results in scientific national and/or international journals

M. PHIL ANATOMY PROGRAM– ROADMAP

Semester-I & Semester-II are Pre-requisite to proceed to Semester -III

SEMESTER-I

Sr.No.	Course Code	Course Title	Credit Hours	Theory	Practical
1	MED 701	Research methodology, Biostatistics, Epidemiology	3+0	3	0
2	MED 712	Medical Biology & Genetics	2+0	2	0
3	MED 713	Medical Education, Ethics & Writing	2+0	2	0
4	MED 714	Instruments & Animal use in research	2(1+1)	1	1
5	MED 715	Journal Club (Essential)-I	No credit hour	0	0
6	MED 718	Teaching Internship (Essential)-I	No credit hour	0	0
Total Credit Hours in Semester-I			**9**	**8**	**1**

SEMESTER-II

Sr.No.	Course Code	Course Title	Credit Hours	Theory	Practical
1	ANA 730	Neuro-Anatomy with Head & Neck	3(2+1)	2	1
2	ANA 731	GIT with related abnormalities	3(2+1)	2	1
3	XXX XXX	Elective-I	3 (2+1)	2	1
4	MED 716	Journal Club (Essential)-II	No credit hour	0	0
5	MED 719	Teaching Internship (Essential)-II	No credit hour	0	0
Total Credit Hours in Semester-II			**9**	**6**	**3**

SEMESTER-III

Sr.No.	Course Code	Course Title	Credit Hours	Theory	Practical
1	XXX XXX	Elective-II	3 (2+1)	2	1
2	XXX XXX	Elective-III	3 (2+1)	2	1
3	THS 700	Thesis-I	3+0	3	0
4	MED 717	Journal Club (Essential)-III	No credit hour	0	0
5	MED 720	Teaching Internship (Essential)-III	No credit hour	0	0
Total Credit Hours in Semester-III			**9**	**7**	**2**

SEMESTER-IV

Sr.No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	THS 700	THS 701	Thesis-II	3+0	3	0
Total Credit Hours in Semester-IV				**3**	**3**	**0**

LIST OF ELECTIVES

Sr.No.	Course Code	Course Title	Credit Hours	Theory	Practical
1	MED 706	Tissue processing	3(1+2)	1	2
2	MED 708	Cadaveric dissection	3(1+2)	1	2
3	MED 709	Advanced microscopic techniques	3(1+2)	1	2
4	ANA 732	Microscopic structure of Tissue	3(2+1)	2	1
5	ANA 733	Developmental Anatomy	3(2+1)	2	1
6	ANA 734	Musculoskeletal system	3(2+1)	2	1
7	ANA 735	Cardiovascular & Respiratory system	3(2+1)	2	1

MPhil Pathology
Eligibility criteria of all offered programs by school

Eligibility Criteria
Academic Qualifications
- 16 years of education with MBBS/BDS from PMC/HEC recognized university institute with minimum CGPA 2.5/4.0 OR 50% marks where CGPA is not given.
- Completion of one year house job at PMC recognized institution.
- Valid PMDC/PMC registration certificate.
- HEC attestation on candidate's local degree and cumulative transcript (at the back of original degree & transcript)
- Two years teaching experience in the relevant subject will be given preference.

NB: All mentioned certificates duly attested by HEC to be produced at the time of interview otherwise candidate will become ineligible for selection process.

B. Program Timings and specializations
- 2 Years
- Pathology(Histopathology, Microbiology)

C. Road Maps

MPHIL PATHOLOGY PROGRAM – ROADMAP

SEMESTER I

Sr.No.	Course Code	Course Title	Credit Hours	Theory	Practical
1	MED 701	Research Methodology	3+0	3	0
2	MED 712	Medical Biology & Genetics	2+0	2	0
3	MED 713	Medical Education, Ethics & Writing	2+0	2	0
4	MED 714	Instruments & Animal use in research	2 (1+1)	1	1
5	MED 715	Journal Club (Essential)-I	No credit hour	0	0

6	MED 718	Teaching Internship (Essential)-I	No credit hour	0	0
Total Credit Hours in Semester-I			**9**	**8**	**1**

SEMESTER-II

Sr.No.	Course Code	Course Title	Credit Hours	Theory	Practical
1	PAT 740	General Pathology & Basic Microbiology	3(2+1)	2	1
2	PAT 750	Special Pathology	3(2+1)	2	1
3	PAT 751	Microbiology & Mycology	3(2+1)	2	1
4	XXX XXX/ XXX XXX	Elective- I	3(1+2)	1	2
5	MED 716	Journal Club (Essential)-II	No credit hour	0	0
6	MED 719	Teaching Internship (Essential)-II	No credit hour	0	0
Total Credit Hours in Semester-II			**9**	**5**	**4**

SEMESTER-III
Semester-I & Semester-II are Pre-requisite to proceed to Semester –III

Sr.No.	Course Code	Course Title	Credit Hours	Theory	Practical
1	XXX XXX/ XXX XXX	Elective-II	3(1+2)	1	2
2	XXX XXX/ XXX XXX	Elective-III	3(1+2)	1	2
3	THS 700	Thesis-I	3+0	3	0
4	MED 717	Journal Club (Essential)-III	No credit hour	0	0
5	MED 720	Teaching Internship (Essential) -III	No credit hour	0	0
Total Credit Hours in Semester-III			**9**	**5**	**4**

SEMESTER-IV

Sr.No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	THS 700	THS 701	Thesis-II	3+0	3	0
Total Credit Hours in Semester-IV				**3**	**3**	**3**

D. LIST OF ELECTIVES

PATHOLOGY					
S. No	Course Code	Course Title	Credit Hours	Theory	Practical
1	PAT-742	Tissue processing for histopathology	1+2	1	2
2	PAT-743	Histopathology laboratory procedures & reporting	1+2	1	2
3.	PAT-744	Endocrine & Renal disorders	1+2	1	2
4	PAT-745	Molecular pathology laboratory- related to tissue pathology	1+2	1	2
5	PAT-746	Microbiology laboratory - procedures & reporting	1+2	1	2
6	PAT-747	Molecular pathology laboratory- related to infectious diseases	1+2	1	2
7	PAT-748	Virology	1+2	1	2
8	PAT-749	Parasitology	1+2	1	2

MPhil Pharmacology

Eligibility criteria of all offered programs by school

Eligibility Criteria
Academic Qualifications
- 16 years of education with MBBS/BDS from PMC/HEC recognized university institute with minimum CGPA 2.5/4.0 OR 50% marks where CGPA is not given.
- Completion of one year house job at PMC recognized institution.
- Valid PMDC/PMC registration certificate.
- HEC attestation on candidate's local degree and cumulative transcript (at the back of original degree & transcript)
- Two years teaching experience in the relevant subject will be given preference.

NB: All mentioned certificates duly attested by HEC to be produced at the time of interview otherwise candidate will become ineligible for selection process.

Program Timings and specializations
- 2 Years

MPhil-Pharmacology

MPHIL -PHARMACOLOGY PROGRAM – ROADMAP

SEMESTER-I

Sr.No.	Course Code	Course Title	Credit Hours	Theory	Practical
1	MED 701	Research Methodology	3+0	3	0
2	MED 712	Medical Biology & Genetics	2+0	2	0
3	MED 713	Medical Education, Ethics & Writing	2+0	2	0
4	MED 714	Instruments & Animal use in research	2(1+1)	1	1
5	MED 715	Journal Club (Essential)-I	No credit hour	0	0

6	MED 718	Teaching Internship (Essential)-I	No credit hour	0	0
Total Credit Hours in Semester-I			**9**	**8**	**1**

SEMESTER-II

Sr.No.	Course Code	Course Title	Credit Hours	Theory	Practical
1	PHM 721	Pharmacological concepts & Adrenergic Pharmacology	3(2+1)	2	1
2	PHM 722	Cholinergic & Cardio-Respiratory Pharmacology	3+0	3	0
3	XXX XXX	Elective –I	3+0	3	0
4	MED 716	Journal Club (Essential)-II	No credit hour	0	0
5	MED 719	Teaching Internship (Essential)-II	No credit hour	0	0
Total Credit Hours in Semester-II			**9**	**8**	**1**

SEMESTER-III

Sr.No.	Course Code	Course Title	Credit Hours	Theory	Practical
1	XXX XXX	Elective-II	3+0	3	0
2	XXX XXX	Elective-III	3+0	3	0
3	THS 700	Thesis-I	3+0	3	0
4	MED 717	Journal Club (Essential)-III	No credit hour	0	0
5	MED 720	Teaching Internship (Essential)-III	No credit hour	0	0
Total Credit Hours in Semester-III			**9**	**9**	**0**

Semester-I & Semester-II are Pre-requisite to proceed to Semester -III

SEMESTER-IV
E.

Sr.No.	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	THS 700	THS 701	Thesis-II	3+0	3	0
Total Credit Hours in Semester-IV				**3**	**3**	**0**

<u>**LIST OF ELECTIVES**</u>
<u>**PHARMACOLOGY**</u>

S. No.	Course Code	Course Title	Credit Hours	Theory	Practical
1	MED 706	Tissue Processing	3(2+1)	2	1
2	MED 707	Drug Bio-screening & Herbal Medications	3(2+1)	2	1
3	PHM 723	Neuropharmacology	3+0	3	0
4	PHM 724	Endocrine & Gastrointestinal Pharmacology	3+0	3	0
5	PHM 725	Chemotherapy	3+0	3	0
6	PHM 726	Toxicology	3+0	3	0
7	PHM 727	Pharmacogenetics	3+0	3	0
8	PHM 728	Autacoids & Analgesics	3+0	3	0

DPT – Doctor in Physical Therapy

DPT - ROAD MAP

Semester 1:

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Prac-tical
1	—–	ANT 101	ANATOMY –I (Theory) ANATOMY –I (Practical)	4	3	1
2	—–	PHY 102	PHYSIOLOGY-I (Theory) PHYSIOLOGY-I (Practical)	3	2	1
3	—–	KNS 103	KINESIOLOGY-I (Theory) KINESIOLOGY-I (Practical)	3	2	1
4	—–	***ENG 103**	ENGLISH-I (FUNCTIONAL ENGLISH)	3	3	0
5	—–	***PST 101**	PAKISTAN STUDIES	2	2	0
6	—–	ITC 106	INTRODUCTION TO COMPUTER	3	2	1
			Total Credit Hours in Semester-1	**18**		

Semester 2:

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Prac-tical
1	—–	ANT 107	ANATOMY –II (Theory) ANATOMY –II (Practical)	4	3	1
2	—–	PHY 108	PHYSIOLOGY-II (Theory) PHYSIOLOGY-II (Practical)	3	2	1
3	—–	KNS 109	KINESIOLOGY-II (Theory) KINESIOLOGY-II(Practical)	3	2	1
4	—–	***ENG 104**	ENGLISH-II (COMMUNICA-TION SKILLS)	3	3	0
5	—–	***ISL 101**	ISLAMIC STUDIES / ETHICS	2	2	0
6	—–	SOC 112	SOCIOLOGY	2	2	0
			Total Credit Hours in Semester-2	**17**		

Semester 3:

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Prac-tical
1	—–	ENG 222	ENGLISH-III (Technical Writing & Presentation Skills)	3	3	0
2	—–	MEP 202	MEDICAL PHYSICS (Theory) MEDICAL PHYSICS (Practical)	3	2	1
3	—–	ANT 203	ANATOMY –III (Theory) ANATOMY –III (Practical)	3	2	1
4	—–	PHY 204	PHYSIOLOGY-III (Theory) PHYSIOLOGY-III (Practical)	3	2	1
5	—–	BIE 205	BIOMECHANICS & ERGONOMICS-I	3	3	0
6	—–	BIO 206	BIOCHEMISTRY I	2	2	0
			Total Credit Hours in Semester-3	**17**		

Semester 4:

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	—–	ANT 207	ANATOMY-IV (Neuro Anatomy) (Theory) ANATOMY-IV (Neuro Anatomy) (Practical)	3	2	1
2	—–	BIE 208	BIOMECHANICS & ERGONOMICS-II	3	2	1
3	—–	HEW 209	HEALTH & WELNESS	2	2	0
4	—–	BIO 210	BIOCHEMISTRY II (Theory) BIOCHEMISTRY II (Practical)	3	2	1
5	—–	EPY 211	EXERCISE PHYSIOLOGY (Theory) EXERCISE PHYSIOLOGY (Practical)	3	2	1
6	—–	MBG 212	MOLECULAR BIOLOGY & GENETICS	2	2	0
			Total Credit Hours in Semester-4	**16**		

Semester 5:

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	—–	PAM 301	PATHOLOGY & MICROBIOLOGY I	2	2	0
2	—–	PHT 302	PHARMACOLOGY & THERAPEUTICS I	2	2	0
3	—–	PAE 303	PHYSICAL AGENTS & ELECTROTHERAPY I (Theory) PHYSICAL AGENTS & ELECTROTHERAPY I(Practical)	3	2	1
4	—–	TET 304	THERAPEUTIC EXERCISES & TECHNIQUES (Theory) THERAPEUTIC EXERCISES & TECHNIQUES (Practical)	3	2	1
5	—–	BST 305	BIOSTATISTICS I	3	3	0
6	—–	BPE 306	BEHAVIORAL SCIENCES(PSYCHOLOGY & ETHICS)	2	2	0

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
7	—–	SCP 307	SUPERVISED CLINICALPRACTICE I (Practical)	3	0	3
			Total Credit Hours in Semester-5	**18**		

Semester 6:

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	—–	****PAM 30**8	PATHOLOGY & MICROBIOLOGY II(Theory) PATHOLOGY &MICROBIOLOGY II(Practical)	3	2	1
2	—–	****PHT 309**	PHARMACOLOGY &THERAPEUTICS II	2	2	0
3	—–	PAE 310	PHYSICAL AGENTS & ELECTROTHERAPY –II (Theory) PHYSICAL AGENTS &ELECTROTHERAPY –II (Practical)	3	2	1

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
4	—–	BST 311	BIOSTATISTICS II(university optional)	3	3	0
5	—–	CMR 312	COMMUNITY MEDICINE & REHABILITATION	3	3	0
6	—–	SCP 313	SUPERVISED CLINICAL PRACTICE II (Practical)	3	0	3
			Total Credit Hours in Semester-6	**17**		

Semester 7:

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	—–	MED 401	MEDICINE I	3	3	0
2	—–	SUG 402	SURGERY I	3	3	0
3	—–	RDI 403	RADIOLOGY &DIAGNOSTIC IMAGING(Theory) RADIOLOGY &DIAGNOSTIC IMAGING(Practical)	3	2	1

4	—–	MPT 404	MUSCULOSKEL-ETAL PHYSICAL THERAPY(Theory) MUSCULOSKEL-ETAL PHYSICAL THERAPY (Practical)	3	2	1
5	—–	EBP 405	EVIDENCE BASEDPRACTICE (Theory) EVIDENCE BASEDPRACTICE (Practical)	3	2	1
6	—–	SCP 406	SUPERVISED CLINICALPRAC-TICE III (Practical)	3	0	3
			Total Credit Hours in Semester-7	**18**		

Semester 8:

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Prac-tical
1	—–	MED 407	MEDICINE II	3	3	0
2	—–	SUG 408	SURGERY II	3	3	0
3	—–	NPT 409	NEUROLOGICAL PHYSICAL THERAPY(Theory) NEUROLOGICAL PHYSICAL THERAPY(Practical)	3	2	1

4	—–	SRM 410	SCIENTIFIC IN-QUIRY & RE-SEARCH METH-ODOLOGY (Theory) SCIENTIFIC INQUIRY &RE-SEARCH METH-ODOLOGY (Practical)	3	2	1
5	—–	EPT 411	EMERGENCY PROCEDURES &PRIMARY CARE IN PHYSICAL THERAPY (The-ory) EMERGENCY PROCEDURES & PRIMARY CARE INPHYSICAL THERAPY (Prac-tical)	3	2	1
6	—–	SCP 412	SUPERVISED CLINICAL PRAC-TICE IV (Practi-cal)	3	0	3
			Total Credit Hours in Semester-8	**18**		

Semester 9:

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	—–	CPT 501	CARDIOPULMONARY PHYSICAL THERAPY (Theory) CARDIOPULMONARY PHYSICAL THERAPY (Practical)	3	2	1
2	—–	PRO 502	PROSTHETICS &ORTHOTICS	2	2	0
3	—–	CDD 503	CLINICAL DECISIONMAKING & DIFFERENTIAL DIAGNOSIS	3	3	0
4	—–	MAT 504	MANUAL THERAPY (Theory) MANUAL THERAPY(Practical)	3	2	1
5	—–	PPL 505	PROFESSIONAL PRACTICE (LAWS , ETHICS &ADMINISTRATION)	2	2	0
6	—–	IPT 506	INTEGUMENTRY PHYSICAL THERAPY (Theory)	2	2	0
7	—–	SCP 507	SUPERVISED CLINICAL PRACTICE V (Practical)	3	0	3
			Total Credit Hours in Semester-9	**18**		

Semester 10:

Sr.No.	Prerequisite course code	Course Code	Course Title	Credit Hours	Theory	Practical
1	—–	OGT 508	OBSTETRICS & GYNAECOLOGICAL PHYSICAL THERAPY	2	2	0
2	—–	PET 509	PAEDIATRIC PHYSICAL THERAPY	2	2	0
3	—–	GGT 510	GERONTOLOGY & GERIATRIC PHYSICAL THERAPY	2	2	0
4	—–	SPT 511	SPORTS PHYSICAL THERAPY	2	2	0
5	—–	SCP 512	SUPERVISED CLINICAL PRACTICE VI (Practical)	4	0	4

6	—–	REP 513	RESEARCH PROJECT	6		
			Total Credit Hours in Semester 10	**18**		

BS Nursing

BS Nursing - ROAD MAP

Semester-1

Sr.No.	Pre-requisite course code	Course Code	Course Title	Total Credit Hours	Theory	Clinical	Skills/Lab
1	–	FON101	Fundamental of Nursing-I	4	2	–	2
2	–	MIC 102	Microbiology	3	2.5	–	0.5
3	–	ANP 103	Anatomy and Physiology-I	3	3		–
4	–	BIO 104	Biochemistry for Nurses	3	2	–	1
5	–	ENG 103	English-I	2	2	–	–
6	–	COS 106	Computer Skills	1	1	–	1
Total Credit Hours in Semester-1				16	11.5	–	4.5

Semester-2

Sr.No.	Pre-requisite course code	Course Code	Course Title	Total Credit Hours	Theory	Clinical	Skills/Lab
1	FON 101	FON 107	Fundamental of Nursing-II	4	2	1	1
2	ANP 103	ANP 108	Anatomy and Physiology-II	3	–	–	–
3	–	CHN 109	Community Health Nursing-I	3	2	1	
4	–	APP 110	Applied Nutrition	1	1	–	–
5	ENG 103	ENG 104	English-II	2	2	–	–
6	–	ISL 101	Islamic Studies	2	2	–	–
7		PAK 101	Pakistan Studies	2	2	–	–
Total Credit Hours in Semester-2				17	11	2	1

Semester-3

Sr.No.	Pre-requisite course code	Course Code	Course Title	Total Credit Hours	Theory	Clinical	Skills/Lab
1	–	AHN 201	Adult Health nursing-I	8	4	3	1
2	–	PTH 202	Pathophysiolo-gy-I	2	1.75	–	0.25

3	–	HEA 203	Health Assessment-I	2	1	–	1
4	–	PHR 204	Pharmacology-I	2	2	–	–
5	–	MAT 205	Mathematics	1	1	–	–
6	ENG 104	ENG 112	English-III	2	2	–	–
Total Credit Hours in Semester-3				**17**	**11.75**	**3**	**2.25**

Semester-4

Sr.No.	Pre-requisite course code	Course Code	Course Title	Total Credit Hours	Theory	Clinical	Skills/Lab
1	AHN 201	AHN 207	Adult Health nursing-II	8	4	3	1
2	PTH 202	PTH 208	Pathophysiology-II	3	2.75	–	0.25
3	HEA 203	HEA 209	Health Assessment-II	2	1	–	1
4	–	DVP 210	Developmental psychology	2	2	–	–
5	PHR 204	PHR 211	Pharmacology-II	2	2	–	–
6	ENG 112	ENG 212	English-IV	2	2	–	–
7	–	NRE 213	Nursing Ethics	1	1	–	–
Total Credit Hours in Semester-4				**20**	**14.75**	**3**	**2.25**

Semester-5

Sr.No.	Pre-requisite course code	Course Code	Course Title	Total Credit Hours	Theory	Clinical	Skills/Lab
1	–	PHN 301	Paediatric Health Nursing	7	3	3	1
2	CHN 109	CHN 302	Community Health Nursing	6	2.5	2.5	1
3	–	TEL 303	Teaching/Learning: Principles/Practices	3	3	–	–
4	ENG 212	ENG 304	English V	2	2	–	–
Total Credit Hours in Semester-5				**18**	**10.5**	**5.5**	**2**

Semester-6

Sr.No.	Pre-requisite course code	Course Code	Course Title	Total Credit Hours	Theory	Clinical	Skills/Lab
1	–	MHN 305	Mental Health Nursing	6	3	3	–
2	–	INB 306	Introduction to Biostatistics	3	2.5	–	0.5
3	–	BHP 307	Behavioral psychology	3	3	–	–
4	–	EPI 308	Epidemiology	2	2	–	–

5	ENG 304	ENG 315	English-VI	2	2	–	–
6	–	CHS 210	Culture, Health and Society	2	2	–	–
Total Credit Hours in Semester-6				18	14.5	3	0.5

Semester-7

Sr.No.	Pre-requisite course code	Course Code	Course Title	Total Credit Hours	Theory	Clinical	Skills/Lab
1	–	CCN 401	Critical Care Nursing	7	2.5	4	0.50
2	–	INT 402	Introduction to Nursing Theories	2	2	–	–
3	–	LIV 403	Leadership and Management in Nursing	3	2	1	–
4	–	NUR 404	Nursing Research	3	3	–	–
5	ENG 315	ENG 415	English VII	2	2	–	–
Total Credit Hours in Semester-7				17	11.5	5	0.50

Semester-8

Sr.No.	Pre-requisite course code	Course Code	Course Title	Total Credit Hours	Theory	Clinical	Skills/Lab
1	CHN 109,302	CHN 406	Community Health Nursing-III	5	2	3	–
2	–	NST 407	Nursing Seminar/Role Transition	2	2	–	–
3	–	CLP 408	Clinical Practicum	5	–	4	1
4	ENG 415	ENG 416	English-VIII	2	2	–	–
Total Credit Hours in Semester-8				14	6	7	1

BS Medical Laboratory Technology

BS MLT - Road Map

Course title	BS (4 year degree program) in Medical Technology Offered in Clinical Laboratory Science/Clinical Pathology/Clinical Chemistry/ Medical Biochemistry
Course duration	4 YEARS
Study system	SEMESTER SYSTEM
No. of regular semesters	8

Semester Duration	16- 18 weeks
Total credit hours	130 (HEC recommended: 124-136)
Number of courses per semester	4-6
Course Load per Semester	15-18 credit hr
Course Title with study hrs	See table 1& II
Campus	Health Sciences Campus Karachi
Eligible Criteria	50% marks or above in Intermediate Science (Preferably Pre-Medical) or equivalent examination.
Program Timing	Morning

Details with title of courses

Year	Semester	Course Codes	Title of Course	Credit hrs
1st year	I	MBC 101	Medical Biochemistry -I	3 + 1
		HPH 102	Human Physiology-I	3 + 1
		HAT 103	Human Anatomy-I	3 + 1
		ENG 104	English -I	2 + 0
		PKS 105	Pakistan Studies	2 + 0
		CSK 106	Computer Skills	1+ 1
	II	MBC 107	Medical Biochemistry -II	3 + 1
		HPH 108	Human Physiology-II	3 + 1
		HAT 109	Human Anatomy -II	2 + 1
		ENG 110	General Pathology-I	2 + 1
		GPT 111	English -II	2 + 0
		IST 112	Islamic Studies	2 + 0

Year	Semester	Code	Title	Credit hrs
2nd year	III	GPH 201	General Pharmacology-I	2+ 1
		HMT 202	Hematology – I	2+ 1
		HGN 203	Human Genetics	2+ 1
		DMB 204	Diagnostic Microbiology-I	2+ 1
		GPT 205	General Pathology-II	2+ 1
	IV	GPH 206	General Pharmacology-II	2+ 1
		DMB 207	Diagnostic Microbiology-II	2+ 1
		HMT 208	Hematology -II	2+ 1
		CPT 209	Chemical Pathology	2+ 1
		CVM 210	Clinical Virology and Mycology	2+ 1
		BSC 211	Behavioral Sciences	2+ 0
3rd year	V	WPD 301	WBCS and Platelets Disorders	2+1
		HPT 302	Histopathology	2+1
		CPS 30	Clinical Parasitology	2+1
		CPT 304	Clinical Pathology	2+1
		BTC 305	Biotechnology	2+1
	VI	MLI 306	Medical Laboratory Instrumentation	2+1
		BSS 307	Biostatistics	2+1
		IAS 308	Immunology and serology	2+1
		RMT 309	Research Methodology	2+1
		BLB 310	Blood Banking	2+1

4th year	VII	MLM 401	Medical Laboratory Management Skills	2+1
		FIC 4032	Fundamental of infection control	2+1
		MCB 403	Molecular Biology	2 +1
		EPD 404	Epidemiology	2 +0
		SDB 405	Systematic Diagnostic Bacteriology	2 +1
		CAC 406	Cytology and Cytogenetics	2 +1
	VIII	RPT 407	Research Project	6
		SMR 408	Seminar	1+0
		MSC 409	Medical Sociology	2 +1
		BIN 410	Bioinformatics	1+1
-		CSK 411	Communication Skills	2+1

ADMISSION CRITERIA

UG Programs:
https://www.bahria.edu.pk/admission/undergraduate/academic-eligibility-ug/

PG Programs:
https://www.bahria.edu.pk/admission/postgraduate/academic-eligibility-pg/

PhD Programs:
https://www.bahria.edu.pk/admission/postgraduate/academic-eligibility-doctorate/

Bahria University
Discovering Knowledge
A PROJECT OF PAKISTAN NAVY

Bahria Univeristy E-8 Campus

🏫 Shangrilla Road, Sector E-8 Islamabad

📞 +92-51-111-111-028

✉ info@bahria.edu.pk

Bahria Univeristy H-11 Campus

🏫 BSEAS, BUIC (H-11) Sector H-11/4, Islamabad

📞 +92-51-9259503

✉ info@bahria.edu.pk

National Institute of Maritime Affairs (NIMA)

🏫 Shangrilla Road, Sector E-8 Islamabad

📞 +92-51-111-111-028

✉ info@bahria.edu.pk

Karachi Campus

🏫 13 National Stadium Rd, Karachi

📞 +92-21-111-111-028

✉ info@bahria.edu.pk

Institue of Professional Psychology

🏫 13 National Stadium Rd, Karachi

📞 +92-21-111-111-028

✉ info@bahria.edu.pk

Lahore Campus

🏫 47 C, Civic Center, Johar Town Lahore

📞 +92-42-99233408-15

✉ info@bahria.edu.pk

Bahria University Health Sciences (BUHS)

🏫 Adjacent to PNS SHIFA, DHA Phase-II, Karachi

📞 +92-21-35319491-9

✉ info.bumdc@bahria.edu.pk

Head Office:

Shangrilla Road, Sector E-8 Islamabad. UAN: +92-51-111-111-028, Email: info@bahria.edu.pk