DAWOOD UNIVERSITY OF ENGINEERING & TECHNOLOGY KARACHI

University of Relevance Leading to Techno-preneural Excellence

PROSPECTUS
2025-26

DAWOOD
UNIVERSITY
OF ENGINEERING & TECHNOLOGY

UNITY . FAITH . DISCIPLINE

VISION

The University of Relevance Leading to Techno-preneural Excellence

MISSION

Dawood University of Engineering & Technology aims to invest in human capital for accelerated advancement in engineering knowledge and practices, new frontiers in R&D hence creating knowledge-led economy and better future for generations to come.

GOALS

- Help place-bound students achieve their educational aspirations.
- Expand public engagement to contribute to economic and cultural vitality and to the health and quality of life of people of Pakistan.
- Graduate education and training that prepares students for interdisciplinary engineering research and advanced problem solving.
- Align university resources with important state needs to promote multidisciplinary research.
- Create knowledge base that integrates technical expertise, communication skills and team building; required for commercialization of research.

OBJECTIVES

- Establish contemporary and rigorous educational units and practices that produce well rounded engineers.
- Create an atmosphere that facilitates personal commitment to the educational success of students in an environment that values diversity and community.
- Develop education and research partnerships with targeted agencies, universities, and industries.
- Foster Highly successful alumni who contribute to the Profession in the global society.
- Conduct internationally recognized research programs.
- Preferred avenue for the industry to seek solutions and technical advice.
- Emerge as think tank for Government for prudent and accountable resource management.

GOVERNOR's MESSAGE

I am delighted to extend my warmest congratulations to the entire Dawood University of Engineering & Technology (DUET) on the remarkable progress achieved over the past few years. As the Chancellor, it is heartening to witness the university's commitment to excellence and innovative ideas for graduates' success.

The introduction of internationally certified microprograms in various disciplines, such as like Health, Safety & Environment (HSE), Ethical Hacking and the Google Career Certificate by Dawood University is a testament to its focus on providing cutting-edge education.

Mr. M. Kamran Khan Tessori
Governor of Sindh/Chancellor,
DUET

The university's extracurricular activities have been thriving, fostering a culture of inclusivity and community engagement. The expansion of the Gulberg town campus for the Faculty of Information and Computer Science will further enhance the university's capabilities in this vital field. I am excited about the establishment of the Centre for Entrepreneurship Management & Emerging Technologies (CEMET) at the new Sukkur campus, Which will focus on modern trends in self-sustained business management and cutting-edge technologies. Furthermore, the university's campus programs and international mobility initiatives will provide students with valuable global exposure and diverse opportunities.

I envision Dawood University of Engineering & Technology becoming a hub for relevant research for indigenous solutions, entrepreneurship, and academic excellence. The commitment of providing quality education, fostering the importance of community service & promoting civic sense and professional ethics will remain unwavering.

I would like to express my sincere appreciation to the Vice Chancellor, Engr. Prof. Dr. Samreen Hussain, faculty, officers, staff, and students for their hard work and dedication. Your collective efforts have been instrumental in driving the university's progress.

I wish the Dawood University community continued success and growth. I look forward to witnessing the university's future achievements and contributions to society.

Muhammad Kamran Khan Tessori
Governor of Sindh Chancellor DUET

CHIEF MINISTER's MESSAGE

I am pleased to acknowledge the remarkable progress achieved by Dawood University of Engineering & Technology over the past two years. Achieving an impressive employability rate of 78% through innovative micro-degree programs, enabling students to earn international certifications in Health, Safety, and Environment (HSE) and Ethical Hacking, as well as the successful execution of the Google Career Certificates program, illustrates the University's commitment to global standards.

Mr. Syed Murad Ali Shah
The Chief Minister, Sindh

The University has fostered a culture of innovation and entrepreneurship, focusing on out-of-the-box solutions for graduate success. Introducing a Three-Pronged Approach, centred on lifelong learning, entrepreneurship, and industry placement, has led to over 36 on-campus recruitment drives in collaboration with industry partners. These efforts have significantly reduced the industry-academia gap and contributed to the outstanding employability of recent graduates.

The decision to make internships and University Social Responsibility mandatory for degree completion reflects the University's dedication to developing skilled professionals and well-rounded individuals who embody professional ethics, empathy, and a strong sense of community.

The establishment of the Career Counselling and International Mobility Directorate has made a major contribution, including the successful launch of the University's first-ever student exchange program - an important milestone in its history.

The expansion to new locations such as Gulberg and Sukkur through a two-plus-two(2+2) program, the construction of a state-of-the-art auditorium, and the revitalisation of ageing infrastructure have all contributed to an improved university environment.

Overcoming financial deficits and liabilities through prudent resource management has enabled the University to achieve financial sustainability. This has allowed for infrastructure development, the establishment of new laboratory facilities, and overall quality improvements - all accomplished without relying on additional government grants. These academic and financial reforms have resulted in a significant increase in student enrolment.

I extend my sincere appreciation to Engr. Prof. Dr. Samreen Hussain and her entire team for their tireless efforts, dedication, and commitment to excellence. Under your exceptional leadership, the University has been transformed. I am confident that your contributions will leave a lasting impact, and I commend you for driving growth, discipline, and academic distinction.

I wish Dawood University of Engineering & Technology continued success and growth in the future, with the same momentum and vigour.

Mr. Syed Murad Ali Shah
Chief Minister, Sindh

VICE CHANCELLOR's MESSAGE

Prof. Dr. Samreen Hussain (S.I, T.I)
Vice Chancellor DUET

I bow my head before Allah the Almighty for all His blessings and delighted to share the progress Dawood University of Engineering and Technology has made over the past year. Our vision for graduate success is built on a three-pronged approach:

1. *Lifelong Learning*: Through international mobility programs, we are trying to empower our students to stay ahead in their fields. At campus, Directorate of Career Counselling & International Mobility is providing substantial guidance and support for Post Graduate studies abroad as well as in Pakistan.

2. *Industry Placements*: We bridge the industry-academy gap by fostering strong partnerships, ensuring our graduates are industry-ready. The Employability ratio for recent graduates has reached to 80% by the unwavering commitment shown by Directorate of Industrial Liason and Placement Burea.
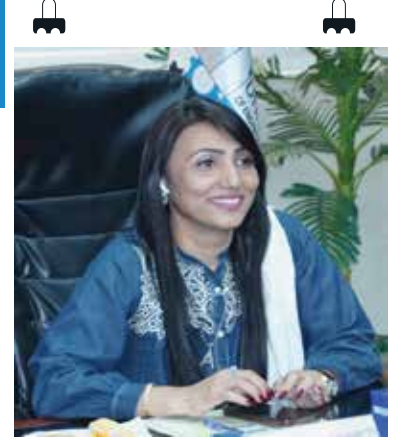
The Micro Degree Program is pivotal in achieving this remarkable employability of DUET graduates and the efforts of Continual Professional Department are laudable for the suceesful executuon of MDP.

3. *Entrepreneurship*: Directorate of Research Innovation & Commercialization has got the full time Director and is pushing the commercialization part very aggressively. Our recently coined idea of establishing "Research Project Development Unit" at the Silicon Valley NASTP karachi is ready to launch by mid July. It shall incubate innovative ideas, ready to market products' start ups promoting entrepreneurship and innovation in the best possible ECO system rrequired for such activities.

Our focus on out-of-the-box solutions for revenue generation and aggressive investment policies has brought financial stability to the university. This stability enables us to invest in infrastructure development, faculty, and student programs, ensuring a bright future for our institution.

Our students are now engaged in various extracurricular activities, including student weeks and sports and literary events. We have expanded our reach to new sites in Gulberg and Sukkur, providing opportunities for students to access quality education and befitting resources required for learning and best campus life experience.

As we move forward, we remain committed to our mission of producing graduates who are not only technically proficient but also innovative, entrepreneurial, and globally competitive with great sense of social responsibility and moral values.

I am excited to welcome yet another batch of fresh minds with great potential to become a successful professional with the help of in depth knowledge of our faculty, conducive learning environment, equipped laboratories and complete range of extra and co-curricular activities to have a meaningful journey all through out their campus life. We aim to transform all our students as a well rounded human being than just an engineer or scientist.

I believe your stay at Dawood university of Engineering & Technology shall be filled with opportunities , learning and cherishable memories.

Sincerely,

Dr. Samreen Hussain (S.I, T.I)
Vice Chancellor,
Dawood University of Engineering and Technology

INTRODUCTION

CHAPTER

1

INTRODUCTION

The foundation stone of the Dawood College of Engineering & Technology was laid by the former President of Pakistan (Late) Field Marshal Muhammad Ayub Khan in 1962. The College was established by the Dawood Foundation under the supervision of Seth Ahmed Dawood in 1964. On March 2013 the Sindh Assembly passed the Sindh ACT No. XII of 2013, upgrading it to a University. Its academic and administrative control has been vested in the Syndicate, Senate, and Academic Council as per ACT. The Vice-Chancellor is the Principal Executive and Academic Officer of the University.

Dawood University of Engineering & Technology (DUET) is comprised of two campuses. The main Jinnah campus is situated near Quaid-e-Azam Mausoleum while Iqbal campus is situated at Block-17 Gulshan-e-Iqbal, Karachi. These campuses comprise various facilities including classrooms, reference and departmental libraries, laboratories, workshops, drawing halls, Student's cafeteria, auditorium, with a capacity of 650, seminar rooms, girls' common room, canteens, masjid, dispensary etc. With the help and financial assistance of the Higher Education Commission (HEC), Video Conference room was established under the PERN, which also provides access to Digital library.

The University offers four-year degree programs in the field of Chemical, Computer System, Electronic, Energy & Environment, Industrial Engineering & Management, Metallurgy & Materials, Petroleum & Gas, **BS (Information Security Engineering)**, Artificial Intelligence, Business Information Systems, Chemistry, Computer Science, Cyber Security, Environmental Science, Mathematics and Five-year degree program in the Field of Architecture & Planning.

In 2018, the University introduced Post Graduate Programs in Chemical Engineering, Electronic Engineering, Metallurgy & Materials Engineering, Telecommunication Engineering, Industrial Chemistry and Industrial Engineering & Management. These programs are designed to usher in an era/culture of research. That is one of the main features   of any Higher Education Institution.

The University has a fleet of ten buses for pick and drop facility to the students. DUET has well-equipped computer laboratories. DUET is situated in the heart of Karachi with an outreach to all the Industrial Zones of the city. Our students have a regular opportunity to visit industries for practical training. Realizing the importance of Quality Assurance, DUET has established its Quality Enhancement Cell (QEC) in November 2009 to implement quality improvement programs in all the departments and faculties of DUET under the supervision and guidelines of the HEC and QAA.
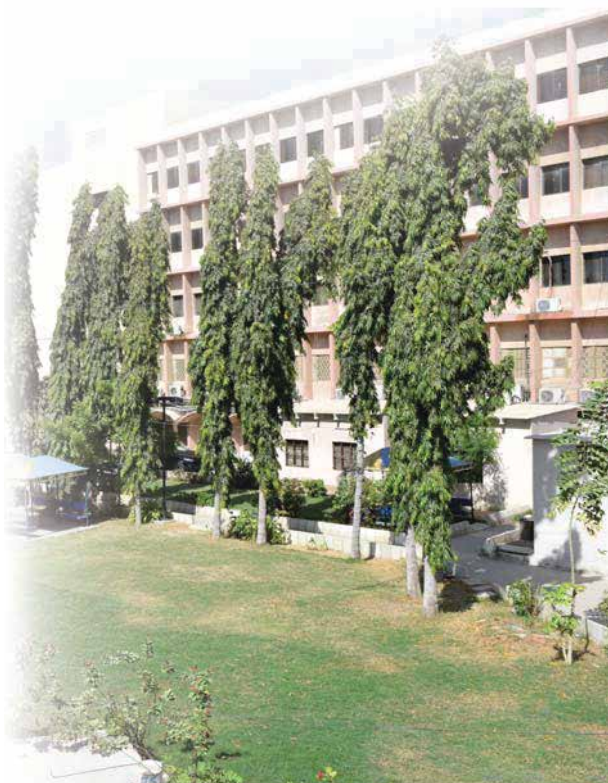
Since Karachi is in the largest industrial city of Pakistan, various Engineering departments are directly involved in providing solutions/consultation to local industries. Students are assigned final year projects with the in-plant training and internship in and outside Karachi under active supervision of experts in the industry. Directorate of Industrial Liaison & Placement Beuru (DILPB), run by highly experienced, qualified, and agile team provide multi-dimensional support to DUET's students. **DILPB** works with industry to determine their operational problems and research needs. The DUET's research teams then determine how best to conduct custom-made research to meet industries specific needs. **DILPB** also works with different educational institutions to nurture the culture of out of the box thinking in students by arranging guest speaker sessions, workshops, and enhancement of presentation skills. **DILPB** also arranges mock interviews, to train the graduating students for the competitive market. **DILPB** arranges annual job fairs in which renowned engineering companies participate and evaluate graduating students for hiring.

To develop entrepreneurial qualities in students and develop a base for impact-based research DUET has recently established an Office for Research Innovation and Commercialization (ORIC). The ORIC is expected to be the hub of research and act as an incubator for our students to enter the world of industry and business.

DUET believes in human development and equal opportunity for all. There are various scholarships, such as Ehsaas, HEC Need Based, PEF, DCET Alumni, IEP-SAC, Pakistan Bait-ul-Mal, available for meritorious and needy students. The student scholarships are managed through the Financial Assistance Department (FAD).

ABOUT CENTRE OF ENTREPRENEURSHIP MANAGEMENT AND EMERGING TECHNOLOGIES (CEMET)-ROHRI

Dawood University of Engineering and Technology (DUET) marked a significant milestone in its journey toward academic and entrepreneuriat excellence with the inauguration of the Centre of Entrepreneurship Management and Emerging Technologies (CEMET) in Rohrl, Sukkur. The inauguration ceremony, held on August 7, 2023, was a mormentous occasion, graced by the presence of Syed Nasir Hussain Shah, Minister for Local Government Sindh, who delivered an inspiring speech encouraging youth to embrace Innovation, technology, and entrepreneurship as tools for societal progress. The following day, on August 8, 2023, the inaugural meeting of CEMET'S Board of Management (BOM) was held, signaling the official operational start of this forward-looking initiative.

CEMET represents DUET's strategic vision to bridge the gap between academia and industry by nurturing entrepreneurial thinking and practical innovation among students. The center is designed to serve as a dynamic hub where students can access the knowledge, resources, and mentorship necessary to transform their Ideas into viable business ventures. By fostering an ecosystem of creativity, collaboration, and enterprise, CEMET aims to cultivate a new generation of leaders equipped not only with technical expertise but also with the entrepreneurial mindset needed to navigate and influence an ever-evolving business and technological landscape.

To support its mission, CEMET offers a wide range of facilities and programs tailored to the needs of aspiring entrepreneurs. These include business incubation services, mentorship programs, hands-on workshops in management and emerging technologies, and strong linkages with industry leaders. This combination of acadernic rigor and practical exposure helps students gain valuable insights into real-world business challenges and opportunities.

In line with its mission to make quality education and innovation more accessible, DUET launched the first round of admissions at CEMET Sukkur for the Spring 2024 session. Four undergraduate programs were Introduced: BS in Business Information Systers, BS in Management & Technology, BS In Artificial Intelligence, and BS in Industrial Management & Technology. These programs are thoughtfully designed to prepare students for careers in high-growth sectors by combining core technical education with managerial and entrepreneurial training.

CEMET Sukkur is equipped with state-of-the-art infrastructure that includes high-tech laboratories, a well-stocked library, modern seminar rooms, and recreational facilities, all aimed at supporting academic, professional, and personal growth. With its holistic approach to education and enterprise, CEMET is poised to become a leading center for innovation and entrepreneurship in the region.

By establishing CEMET in Sukkur, DUET reaffirms its commitment to regional development and youth empowerment. The center stands as a testament to DUET's dedication to producing graduates who are not only job-seekers but also job-creators-individuals ready to contribute meaningfully to Pakistan's economy and society through innovation, leadership, and entrepreneurship.

ABOUT FACULTY OF INFORMATION AND COMPUTING SCIENCES(I&CS) GULBERG

In line with its vision to expand academic access and meet the evolving demands of the digital age, Dawood University of Engineering and Technology (DUET) established a new educational facility-the Gulberg Town Site- Faculty of Information and Computing Sciences(I&CS). Located in the Federal B Area, Karachi, this location is a significant addition to DUET's growing academic infrastructure and reflects the university's strategic commitment to advancing education in computing and emerging technologies

Situated on a 3-acre site that was formerly the Major Tufail Muhammad Shaheed School, the Gulberg Town Campus was formally established through an agreement signed in April 2024 between DUET and the Gulberg Town administration. Under this agreement, DUET has taken responsibility for renovating, upgrading, and repurposing the building to meet the needs of its new faculty. The transformed facility now serves as a state-of-the-art academic hub for students pursuing advanced degrees in computing

The site offers four highly relevant and in-demand undergraduate degree programs: BS Computer Science, BS Artificial Intelligence, BS Cyber Security, and BS Data Science. These programs are designed to equip students with a strong foundation in both theoretical concepts and practical applications, ensuring they are well-prepared to meet the challenges of a rapidly evolving technological landscape. With a curriculum aligned to global academic and industry standards, the Faculty of Information and Computing Sciences at DUET aims to produce graduates who are not only skilled professionals but also innovative thinkers and future tech leaders.

To support its academic mission, the Gulberg Town site features modern infrastructure, including fully equipped computer laboratories, specialized research centers, and a well-stocked library. These facilities are tailored to foster a dynamic and interactive learning environment, encouraging both academic excellence and innovation. The site also serves as a platform for industry-academia collaboration, research projects, and professional development initiatives.

The establishment of the Gulberg Town site marks a forward-thinking step in DUET's journey toward becoming a leading institution in engineering and computing education. It demonstrates the university's proactive approach in responding to the growing demand for professionals in the fields of artificial intelligence, cybersecurity, and data-driven technologies-areas that are central to the Fourth Industrial Revolution. With this expansion, DUET continues to play a pivotal role in shaping the future of Pakistan's tech-driven economy by nurturing talent, driving research, and delivering quality education in the heart of Karach.

ADMINISTRATION

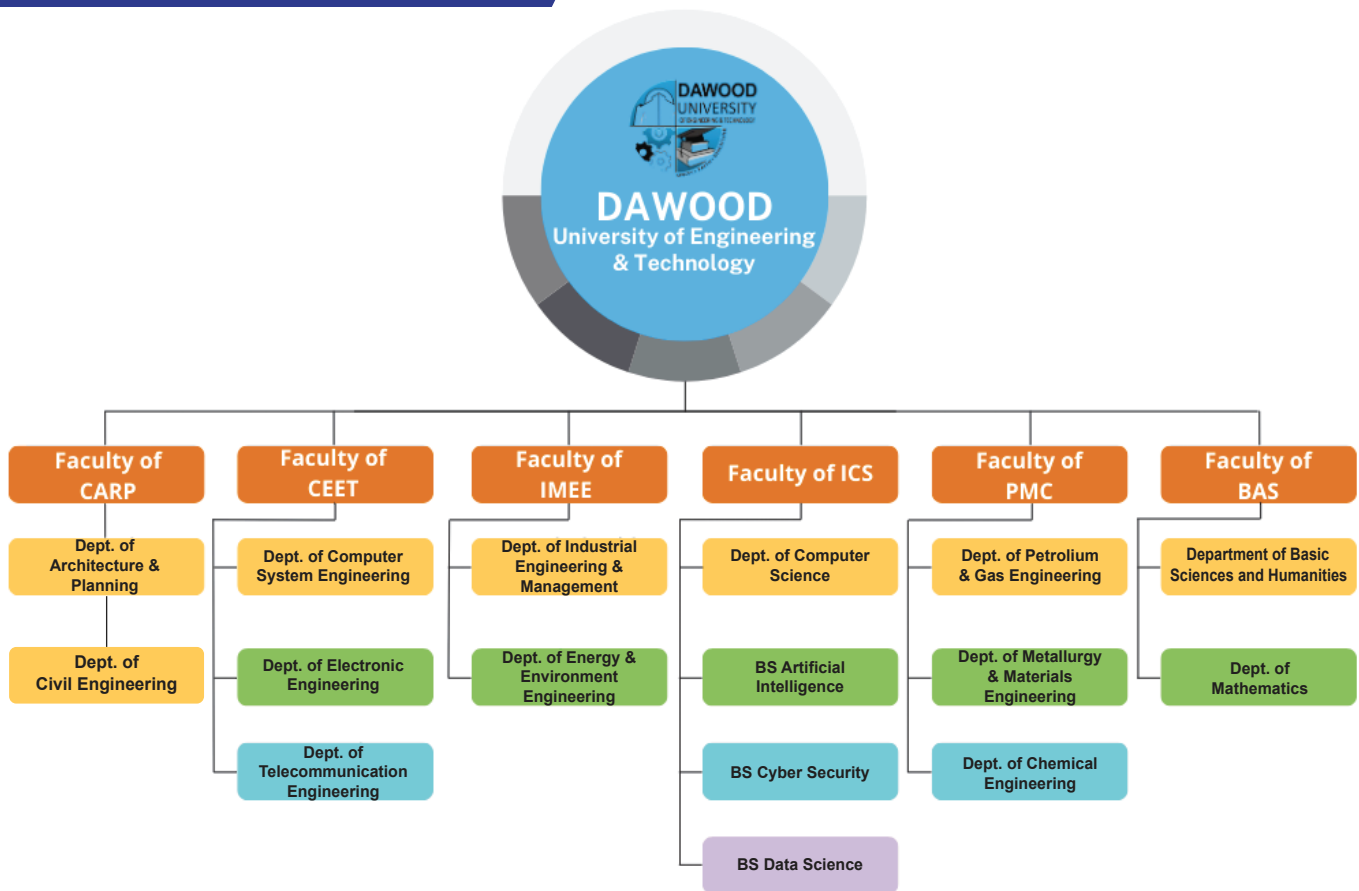| Sr. #	Name / Qualification	Sr. #	Name / Qualification
1.	**Vice Chancellor** **Prof. Dr. Samreen Hussain** PhD (Electronic Engineering) MUET, Jamshoro vc@duet.edu.pk 021-99230701 | 021-99231195-8 Ext: 267	13.	**Director Postgraduates Studies** **Dr. Arsalan Ansari** PhD (Electronic System Engineering), Hanyang Univ., S. Korea. dir.pgs@duet.edu.pk 021-99231195-8 Ext: 310
2.	**Pro-Vice Chancellor** **Prof. Dr. Abdul Waheed Bhutto** PhD (Chemical Engineering) MUET, Jamshoro provc@duct.edu.pk 021-99232648 | 021-99231195-8 Ext: 263	14.	**Director Planning & Development** **Ar. Faryal Sikandar** faryal.sikandar@duet.edu.pk 021-99243878 | 021-99243866
3.	**Dean Faculty of IMEE / Director CEMET** **Prof. Dr. Ghulamullah Maitlo** PhD (Environmental Engineering), MUET, Jamshoro dean.imee@duet.edu.pk 021-99230706	15.	**Director Information & Communication Technology** **Dr. Izhar Hussain Zaidi** PhD (Signal Processing) University of Bistrol, UK dir.ict@duet.edu.pk 021-99232642 | 021-99231195-8
4.	**Dean Faculty of CEET** **Prof. Dr. Engr. H.M Zahid Tunio** PhD (Software Engineering), Beijing University of post and Telecommunication (BUPT China) dean.ceet@duet.edu.pk 021-99232645 | 021-99231195-8 Ext: 251	16.	**Director, Industrial Liaison and Placement Beuru** **Dr. Muhammad Dawood Idrees** PhD Industrial Mgt. Engg. Hanyang University, S. Korea dir.dilpb@duet.edu.pk 021-99232382
5.	**Dean Faculty of CARP** **Prof. Dr. Yasira Naeem Pasha** PhD (Architectural Education) NEDUET, Karachi dean.carp@duet.edu.pk 021-99243878 | 021-99243866	17.	**Director, Student Affairs** **Engr. Saddam Ali Khichi** dir.SA@duet.edu.pk 021-99231195-8
6.	**Dean Faculty of PMC** **Prof. Dr. Rashid Mustafa Korai** PhD (Chemical Engineering & Technology) BUCT, China dean.pmc@duet.edu.pk 021-99232641 | 021-99231195-8 Ext: 223	18.	**Director, ORIC** **Dr. Muhammad Faisal Khan** PhD (Electronics) (GIK Pakistan) dir.oric@duet.edu.pk 021-99231195-8
7.	**Dean Faculty of BAS** **Prof. Dr. Azhar Iqbal** PhD (Algebraic Number Theory) FUUAST, Karachi dean.bas@duet.edu.pk 021-99231195-8	19.	**Director, Quality Enhancement Cell** **Dr. Faraz Ahmed Shaikh** PhD (Electrical Engineering), IIUM Malaysia, dir.qec@duet.edu.pk 021-99231195-8
8.	**Dean Faculty of I&CS** **Prof. Dr. Atif Jamil Shaikh** PhD (Computer Engineering), UTP Malaysia dean.ics@duet.edu.pk	20.	**Director, Financial Assistance Department** **Dr. Tahir Hussain** PhD (Energy & Environment) Aalborg University, Denmark dir.fad@duet.edu.pk 021-99231195-8
9.	**Registrar** **Prof. Dr. Syed Asif Ali Shah** PhD (Nanomaterials) DUT, China registrar@duet.edu.pk 021-99232645 | 021-99231195-8 Ext: 251	21.	**Director, Continuous Professional Development** **Dr. Zubair Ahmed** PhD (Energy & Environment) South China University of Technology, Guangzhou, China dir.cpd@duet.edu.pk 021-99231195-8
10.	**Controller of Examinations** **Mr. Khalid Pahore** MBA controller.examination@duet.edu.pk	22.	**Director, Career Counselling & International Mobility** **Dr. Ghulam Mujtaba** PhD (Energy Environmental Engineering, Myongji University, South Korea, South Korea. dir.ccim@duet.edu.pk 021-99231195-8
11.	**Director Finance** **Mr. Khalil Ur Rehman Abbasi** FCCA Fellow Member of Chartered Certified Account The Association of Chartered Certified Accountant, UK. dir.finance@duet.edu.pk	23.	**Director Sports** **Dr. Inamullah Maitlo** PhD (Biomaterials) BUCT, China dir.sports@duet.edu.pk 021-99231195-8
12.	**Convener Admissions** **Dr. Faraz Mehmood** PhD (Mathematics), University of Karachi faraz.mehmood@duet.edu.pk 021-99230706	24.	**Director Alumni Affairs** **Dr. Nadia Ansari** PhD (Electronic Engineering) Hamdard University, Karachi. Dir.DAA@duet.edu.pk 021-99231195-8

ACADEMIC HEADS

Sr. #	Name / Qualification	Sr. #	Name / Qualification
1.	**Department of Architecture & Planning** **Ar. Reena Majid Memon** MSC, (Environmental Design) chairperson.dap@duet.edu.pk 021- 99243874 | 021-99243866	7.	**Department of Energy & Environment Engineering** **Dr. Zubair Ahmed** PhD (Energy & Environment) South China University of Technology, Guangzhou, China chairperson.ee@duet.edu.pk 021-99231195-8
2.	**Department of Basic Sciences and Humanities** **Dr. Tasneem Zehra** PhD (Organic Chemistry), University of Brunei, Darussalam, Brunei chairperson.bsh@duet.edu.pk 021-9923-2644 | 021-99231195-8 Ext: 239	8.	**Department of Industrial Engineering & Management** **Prof. Dr. Zahid Hussain Hulio** PhD Industrial Mgt, China chairperson.ine@duet.edu.pk 021-99232639 | 021-99231195-8 Ext: 237
3.	**Department of Computer Science** **Dr. Fida Hussain Khoso** PhD (Computer Science, Software Engineering), Indus University Karachi chairperson.cs@duet.edu.pk 021-99231195-8	9.	**Department of Metallurgy and Materials Engineering** **Dr. Inamullah Moitlo** PhD (Metrual Engineering, Manufacturing and Construction) chairperson.mme@duet.edu.pk 021-99232638 | 021-99231195-8 Ext: 307
4.	**Department of Chemical Engineering** **Dr. Abdul Karim Shah** PhD (Chemical Engineering), Hanyang University, South Korea chairperson.che@duet.edu.pk 021-99232637 | 021-99231195-8 Ext: 314	10.	**Department of Mathematics** **Dr. Faraz Mehmood** PhD (Mathematics), University of Karachi chairperson.maths @duet.edu.pk 021-99230706
5.	**Department of Computer System Engineering** **Dr. Ramesh Kumar** PhD (Electronic & Computer Engineering), Hanyang University South Korea chairperson.cse@duet.edu.pk 021-99232645 | 021-99231195-8 Ext: 251	11.	**Department of Petroleum & Gas Engineering** **Dr. Engr. Bilal Shams** PhD (Oil and Gas Field Development Engineering) China chairperson.pge@duet.edu.pk 021-99232641 | 021-99231195-8 Ext: 223
6.	**Department of Electronic Engineering** **Dr. M. Rauf** PhD (Electrical & Electronics Engineering), Univ., Teknologi Petronas, Malaysia. chairperson.es@duet.edu.pk 021-99232636 | 021-99231195-98 Ext: 300	12.	**Department of Telecommunication Engineering** **Engr. Dr. Irfan Ali Chandio** Ph.D. (Electrical and Communication), Malaysia chairperson.te@duet.edu.pk 021-99232642 | 021-99231195-8 Ext: 308

FACULTIES & DEPARTMENTS

CHAPTER

2

2. Faculties & Departments

DAWOOD University of Engineering & Technology

- **Faculty of CARP**
  - Dept. of Architecture & Planning
  - Dept. of Civil Engineering
- **Faculty of CEET**
  - Dept. of Computer System Engineering
  - Dept. of Electronic Engineering
  - Dept. of Telecommunication Engineering
- **Faculty of IMEE**
  - Dept. of Industrial Engineering & Management
  - Dept. of Energy & Environment Engineering
- **Faculty of ICS**
  - Dept. of Computer Science
  - BS Artificial Intelligence
  - BS Cyber Security
  - BS Data Science
- **Faculty of PMC**
  - Dept. of Petrolium & Gas Engineering
  - Dept. of Metallurgy & Materials Engineering
  - Dept. of Chemical Engineering
- **Faculty of BAS**
  - Department of Basic Sciences and Humanities
  - Dept. of Mathematics

2.1 Department wise Subject Requirements of Common Courses for Undergraduate Programs

Requirments of Subjects and Credit Hours

Faculty	PGM Code	Fahm-e-Quran		Foreign Language		Culture		Social Sciences		Management Sciences		Natural Sciences		Computing		Total Credit Hours
		No. of Courses	Credit Hours	No. of Courses	Credit Hours	No. of Courses	Credit Hours	No. of Courses	Credit Hours	No. of Courses	Credit Hours	No. of Courses	Credit Hours	No. of Courses	Credit Hours	
Faculty of CARP	AR	2	2	3	6	2	4	2	4	4	9	2	5	3	7	37
Faculty of CEET	CSE	2	2	3	6	2	4	2	4	2	6	6	19	3	10	51
	ESE	2	2	3	6	2	4	2	4	2	6	6	19	3	10	51
	ISE	2	2	3	6	2	4	2	4	2	6	6	19	3	10	51
Faculty of IMEE	INE	2	2	3	6	2	4	2	6	2	7	6	18	3	9	52
	EE	2	2	3	6	2	4	1	2	2	4	7	23	2	6	47
	ES	2	2	3	6	2	4	4	8	1	2	5	17	1	3	42
Faculty of ICS	CS	2	2	3	6	2	4	5	12	1	2	5	16	1	3	45
	AI	2	2	3	6	2	4	5	12	1	2	5	16	1	3	45
	CY	2	2	3	6	2	4	5	12	1	2	5	16	1	3	45
	DS	2	2	3	6	2	4	5	12	1	2	5	16	1	3	45
Faculty of PMC	PG	2	2	3	6	2	4	1	3	2	6	7	22	2	6	45
	MME	2	2	3	6	2	4	3	5	4	10	5	15	3	9	51
	CH	2	2	3	6	2	4	2	4	1	3	6	20	3	9	48
	MTS	2	2	3	6	2	4	1	2	3	5	6	20	3	9	48
Faculty of BAS	CHM	2	2	3	6	2	4	4	11	1	2	5	16	1	3	44
	MTH	2	2	3	6	2	4	5	13	1	3	5	17	1	3	48
CEMET	MT	2	2	3	6	2	4	5	12	1	3	3	10	1	3	40
	IMT	2	2	3	6	2	4	5	12	1	3	3	10	1	3	40

2.2 List of University Common Course

Course Code	Knowledge Area/Name of Subject	Theory	Lab	Prerequisites
Religion				
(i)	Fehm-e-Quran I	1	0	
(ii)	Fehm-e-Quran II	1	0	
Culture				
HS-1001	Islamic Studies/Ethics	2	0	
HS-1002	Pakistan Studies	2	0	
Foreign Language				
HS-1003	Functional English	2	0	
HS-1004	Communication Skills	2	0	
HS-x005	Technical Report Writing	2	0	
HS-1006	Chinese LanguageI	2	0	
HS-1007	Chinese LanguageII	2	0	
HS-x008	Chinese LanguageIII	2	0	
Social Sciences				
SS-x005	Introduction to Sociology	2	0	
SS-x006	Sociology for Engineers	2	0	
SS-x007	Social Psychology	2	0	
SS-x008	Introduction to Sociolinguistics	3	0	
SS-x009	Psychology and Human Behaviour	2	0	
SS-x010	Professional Psychology	2	0	
SS-x011	Organizational Behaviour	2	0	
SS-x012	Logical & Critical Thinking	2	0	
SS-x013	Introduction to Philosophy	2	0	
SS-x014	Professional Ethics	2	0	
SS-x015	Introduction to Economics	3	0	
SS-x016	Microeconomics	3	0	
SS-x017	Engineering Economics	3	0	
SS-x018	Research Methodology	3	0	
Natural Sciences				
NS-1001	Applied Physics	3	1	
NS-1002	Applied Chemistry	3	1	
NS-1003	Applied Geology	2	1	
NS-1004	Introduction to Environmental Microbiology	2	1	
NS-1005	Elements of Set Theory & Mathematical Logic	3	0	
NS-1006	Statistics	3	0	
NS-1007	Discrete Mathematics	3	0	
NS-1008	Calculus and Analytical Geometry	3	0	
NS-1009	Linear Algebra	3	0	Calculus and Analytical Geometry
NS-2010	Differential Equations	3	0	Calculus and Analytical Geometry
NS-2011	Complex Variable and Transforms	3	0	Differential Equations
NS-3012	Probability & Statistics	3	0	
NS-3013	Numerical Analysis & Computer Application	2	1	Differential Equations
Management Sciences				
MS-x601	Principles of Management	2	0	Offered to students not before Junior Year (Year 3)
MS-x602	Industrial Management	2	0	Offered to students not before Junior Year (Year 3)

MS-x603	Engineering Management	3	0	Offered to students not before Junior Year (Year 3)
MS-x604	Project Management	3	1	Offered to students not before Junior Year (Year 3)
MS-x605	Engineering Project Management	2	0	Offered to students not before Junior Year (Year 3)
MS-x606	Project Planning & Management	2	0	Offered to students not before Junior Year (Year 3)
MS-x607	Environment & Safety Management	3	0	Offered to students not before Junior Year (Year 3)
MS-x608	Quality Control	3	0	Offered to students not before Junior Year (Year 3)
MS-x609	Engineering Economics and Management	3	0	Offered to students not before Junior Year (Year 3)
MS-x610	Entrepreneurship	2	0	Offered to students not before Junior Year (Year 3)
MS-x611	Entrepreneurship and Marketing	3	0	Offered to students not before Junior Year (Year 3)
Computing				
IT-x501	Introduction to Information & Communication Technologies	2	1	
IT-x502	Computer Fundamentals & Programming	2	1	
IT-x503	Computer Programming	3	1	Introduction to Information & Communication Technologies
IT-x504	Computer Simulation	2	1	Computer Fundamentals & Programming
IT-x505	Numerical Methods & Software Applications	2	1	Computer Fundamentals & Programming
IT-x506	Modelling & Simulation	2	1	Computer Programming/Computer Fundamentals & Programming
Internship & CSR				
	Internship	0	2	96 hrs, Mandatory (Non-Credited)
	Corporate Social Responsibility	0	1	48 hrs, Mandatory (Non Credited)

DEPARTMENTS OF ARCHITECTURE & PLANNING AND CIVIL ENGINEERING

CHAPTER

3

ar.duet.edu.pk

3.1 About the department

Department of Architecture and Planning-Dawood University of Engineering and Technology (DAP-DUET), entails a broad framework of design sensitivity. It also includes relative courses based on theory and a wider range of architectural design studios, the architectural design with focusing on social environment in the contemporary connotation.

The education of architecture in Karachi began in the year 1954. It started from "Chai Khana" named as Café Al Mehran, the first venue where classes of School of Architecture were initiated by Pakistan Public Works Department (Pak PWD). In 1956, the school, which was designed by the founder Architect Mehdi Ali Mirza, was housed in a purpose-built premise at Shahra-e-Kamal Attaturk, Karachi.

In 1972, the school was upgraded to a degree program, Bachelor of Architecture (B. Arch) and was merged with Dawood College of Engineering and Technology Karachi. The peculiar achievements of this Department after 1972 are,

- The Golden Jubilee Celebration (2004)

- Four abroad study tours like India, Bangladesh, Iran, Turkey

- Country wide Industrial trips are arranged every year

- The Affiliation with Massachusetts Institute of Technology (MIT) and Harvard-USA, under the umbrella of Agha Khan Award in Architecture. Teachers Exchange Program was also a part of Agha Khan Award venture.

- Commencement of "Design Spectrum Lecture Series" in (2008) in which eminent Architects visit the Department and share their expertise with students.

- Recognition given by Architects Association of England through which DAP-DUET students were awarded exemption in 2 levels of Royal Institute of British Architects (RIBA)

- Strong interaction with the Alumni to do attempts towards academic up gradation. The department also arranges Study Tour to different sites to have exposure of Practical/ Professional knowledge to the students of Architecture through Pakistan visits.

From the year 1995, the Department of Architecture and Planning has been established an exclusive premise, namely the Iqbal Campus. On completion of five-year courses based on theory and design, including thesis design I and II, the department offers bachelor's degree in architecture (BArch).
The department fosters to establish and strengthen its collaborations with professional fora at national and international level. It also intends to explore several ventures in connection to the interdisciplinary

3.2 Mission

The Department of Architecture and Planning is committed with the concept of Founders' concept of "Student Architect".

The Discipline aims developing professionals with adaptation of a philosophy of "Socially Responsive Environmental Design" based on the users' requirements. The Architects' work for carrying out research based on design projects to meet modern trends in Architecture.
"We Prepare Right Professional for the Right Organization".

3.3 Program Educational Objectives (B. Arch Archtecture & Planning)

PEO-1: To train the students as architects having the ability to identify, examine, and analyze for interpretation to draw valid conclusions.

PEO-2: To prepare the students having well versed understanding to formulate real world problems in the domain of architecture, structure, environment, and research and strengthen their abilities to apply problem-solving skills, in order to obtain valid realistic architectural solutions.

PEO-3: o develop the abilities of students in critical thinking and real-time approach with teamwork.

PEO-4: To develop presentation and communication skills required in the corporate world.

PEO-5: To incorporate the abilities in the students to help engaging in lifelong interactive learning and growth in the field of architecture and to understand professional and ethical responsibility.
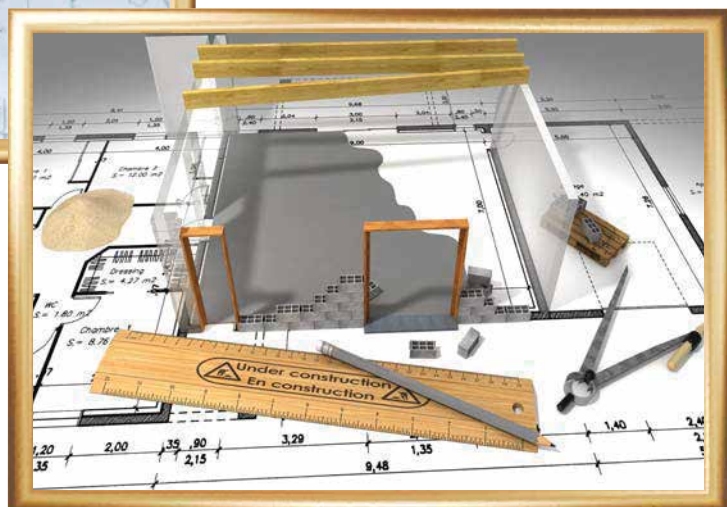
3.4 Faculty Members

Prof. Dr. Yasira Naeem Pasha
Dean, Faculty of CARP
Department of Architecture & Planning
Post-Doctorate in Architecture,
University College London (UCL), UK
PhD in Architecture, NEDUET, Karachi
MSc Environmental Design, Allama
Iqbal Open University, Islamabad
BArch, UET, Lahore
PCATP No. A-2336

Ar. Hira Ovais
Assistant Professor
(On Study Leave)
Ph.D University of Turin, Italy
M. Arch University of Engineering
and Technology, Lahore
B. Arch NED University of
Engineering and Technology,
Karachi.

Ar. Reena Majid Memon
Associate Professor / Chairperson
MSc, Environmental Design, Allama
Iqbal Open University, Islamabad
BArch, MUET, Jamshoro
PCATP No. A-2333

Ar. Muhammad Junaid
Assistant Professor
MSc, Sustainable Architecture and
Healthy Buildings,
University of Derby, UK
BArch, MUET, Jamshoro
PCATP No. A- 03798

Ar. Tamkeena Mustafa
Assistant Professor (On Study Leave)
MSc, Environmental Design, Allama
Iqbal Open University, Islamabad
BArch, DCET, Karachi
PCATP No. A-02798

Ar. Fahad Ahmed Bughio
Assistant Professor (On Study Leave)
MS (Management Science), MAJU,
Karachi
BArch, DUET, Karachi
PCATP No. A- 05387

Ar. Faryal Sikander
Assistant Professor
MArch, NEDUET, Karachi
BArch, MUET, Jamshoro
PCATP No. A-03509

Ar. Salman Mateen
Assistant Professor
MArch, NEDUET, Karachi
BArch, MUET, Jamshoro
PCATP No. A-04525

Ar. Lubaina Adnan
Assistant Professor
MSc, Environmental Design, Allama Iqbal
Open University, Islamabad
BArch, University of Karachi, Karachi
PCATP No. A-2669

Ar. Muhammad Shahzad Yousuf
Assistant Professor
MArch, NEDUET, Karachi
BArch, DCET, Karachi
PCATP No. A-3407

Ar. Furqan Khan
Assistant Professor
MArch, NEDUET, Karachi
BArch, NEDUET, Karachi
PCATP No. A-03090

Ar. Syed Irtaza Ali
Assistant Professor
MArch, Landscape Architecture
Swedish University of Agriculture and
Science, Sweden
BArch, DCET, Karachi
PCATP No. A-3061

Ar. Bushra Danish Talpur
Lecturer (On Study Leave)
MSc Environmental Engineering,
US-PCAS-W PGD, Institute for Housing
and Urban Development Studies,
Erasmus University Rotterdam,
Netherlands BArch, MUET, Jamshoro
PCATP No. A-04387

Ar. Maria Sajid Zaheer
Lecturer
MArch, Urban Planning, NEDUET,
Karachi
BArch, DUET, Karachi
PCATP No. A-05613

Ar. Furqan Arain
Lecturer
MArch, NEDUET, Karachi
BArch, MUET, Jamshoro
PCATP No. A-03293

Ar. Asma Qayoom
Lecturer
MArch, MUET, Jamshoro
BArch, MUET, Jamshoro
PCATP No. A-06330

Ar. Tabish Tariq
Lecturer
MArch, NEDUET, Karachi
BArch, NEDUET, Karachi
PCATP No. A-03293

Ar. Aqta ur Aqsa
Lecturer
MArch, MUET, Jamshoro
BArch, MUET, Jamshoro
PCATP No. A-07357

3.5 B. Arch Architecture & Planning Course Catalogue

Foundation						
AR-1101	Foundation Studio-I	1	7	2	16	
AR-1102	Foundation Studio-II	1	7			
Breadth						
AR-1201	History of Architecture-I	2	0	15	31	
AR-1202	History of Architecture-II	2	0			
AR-2203	Energy and Environment-I	1	1			
AR-2204	Energy and Environment-II	1	1			
AR-2205	Building Materials and Construction-I	1	1			
AR-2206	Building Materials and Construction-II	1	1			
AR-2207	Culture and Architecture in Pakistan	1	1			
AR-3208	Building Systems-I	1	1			
AR-3209	Building Systems-II	1	1			
AR-3210	Theory of Architecture-I	2	0			
AR-3211	Theory of Architecture-II	2	0			
AR-3212	Architectural Heritage	1	1			
AR-3213	Universal Design Accessibility	2	0			
AR-4214	Sustainable Development	1	1			
AR-4215	Critical Analysis of Built Environment	1	2			
Depth						
AR-2301	Architectural Studio-I	0	8	10	62	Foundation Studio - I
AR-2302	Architectural Studio-II	0	8			
AR-3303	Architectural Studio-III	0	8			Architectural Studio - I
AR-3304	Architectural Studio-IV	0	8			
AR-3305	Landscape Design	1	1			
AR-4306	Architectural Studio-V	0	8			Architectural Studio - III
AR-4307	Architectural Studio-VI	0	8			
AR-4308	Urban Design and Planning	2	2			
AR-4309	Interior Design	1	1			
AR-5310	Comprehensive Environmental Design and Planning	0	6			
Electives						
AR-3701	Architectural Photography and Film	0	2	2	4	
AR-3702	Product Design	1	1			
Interdisciplinary						
AR-1401	Surveying and Leveling	1	1	5	10	
AR-2402	Structure for Architects-I	1	1			
AR-2403	Structure for Architects-II	1	1			
AR-4404	Theory of Planning	2	0			
AR-5405	Advanced Technology in Architecture	1	1			
Thesis Design						
AR-5999	Architectural Design Thesis-I	0	10	2	20	Architectural Studio-V, Only Offered in Final Year
AR-5999	Architectural Design Thesis-II	0	10			Only Offered in Final Year
Grand Total		**59**	**120**	**53**	**179**	

3.6 Department of Civil Engineering

Striving to be a university of relevance, Dawood University of Engineering & Technology established the Department of Civil Engineering in 2022.

Being the oldest branch of engineering, Civil Engineering enhances the quality of life by providing better solutions to basic human needs. Civil Engineers are involved in the planning, designing, and overseeing construction and maintenance of building structures, and facilities, such as roads, railroads, airports, bridges, harbors, channels, dams, irrigation projects, pipelines, power plants, and water and sewage systems.

The Civil Engineering curriculum is designed to meet the current industry trend and global agenda. Basic engineering principles and applied sciences are embedded in the civil engineering curriculum which is designed to align with the UN Sustainable Development Goals (SDGs). A strong endorsement of SDG elements ensures that students are nurtured toward a humanized civil engineer. With an emphasis on Problem-based learning (PBL), students are encouraged to attempt real-life problems. The curriculum is delivered using the latest teaching and learning technologies to suit the mentality of the current generation.

The department building is designed to provide academic and research facilities for undergraduate students with state-of-the-art laboratories and modernized classrooms. The Department of Civil Engineering follows the Outcome Based Education (OBE) system, which is tailored as per the Higher Education Commission (HEC) and Pakistan Engineering Council (PEC) guidelines.

Civil Engineering graduates are in constant demand and civil engineers can make their careers in many areas such as Transportation, Coastal Engineering, Structures, Environment, Geotech, Construction, and Architecture.

I. MISSION

The department of Civil Engineering strives to provide a comprehensive understanding of fundamental knowledge, practices and skills of civil engineering and technology. To provide graduates a feeling of duty and responsibility towards environment and humanity. To prepare graduates to use critical thinking to recognize, formulate and solve challenging issues economically.

II. Program Educational Objectives (BE Civil Engineering)

PEO-1: To impart state-of-the-art knowledge of civil engineering in order to design and develop safe and effective structures & infrastructure, as well as to give high-quality service to general public, employers, clients and other professionals.

PEO-2: To work in team-oriented activities that incorporate social, environmental, and economic factors leading to sustainable development.

PEO-3: To provide continued professional and leadership development via an ethical, moral, learning, and problem-solving approach leading towards technopreneural contribution to the society.

III. Faculty Members

Engr. Halima Bano
Assistant Professor
PhD SSUET, Karachi (In Progress)
ME (Geo-Technical Engineering), NEDUET, Karachi
BE (Civil Engineering) NEDUET, Karachi
PEC Number: Civil/34154

Dr. Ruhal Pervez Memon
Assistant Professor
PhD (Civil Engineering), UTM, Malaysia
ME (Structures), UTM, Malaysia
BE (Civil Engineering), MUET, Jamshoro
PEC No. Civil/35838

Engr. Samreen Shabbir
Lecturer
ME (Environmental Engineering), NEDUET, Karachi
BE (Civil Engineering) NEDUET, Karachi
PEC No. Civil/32183

DEPARTMENT OF COMPUTER SYSTEM ENGINEERING

CHAPTER

4

4.1   About The Department

Since its inception in 1962, Dawood College of Engineering and Technology (DCET) has been making sincere efforts and vanguard in developing the potential youth of the nation in the field of engineering & technology. DCET's leading objective is not just to provide teaching facilities, but to impart quality education across the nation. As a result of the hard work of the devoted staff, in 2013, Dawood College was awarded the status of the University.

Dawood University of Engineering and Technology, Karachi (DUET) is committed to academic excellence. Continuing with its vision DUET established the Department of Computer System Engineering (CSE) and offers the four-year Bachelor of Computer System Engineering. The graduated students start their role in the progress of the nation after getting jobs in reputed organizations in the various and connected fields of Computers, some of students pursuing the higher studies as well.

The curriculum is designed to meet the requirements of educational, research, and market trends. An understanding of the social, economic, and safety considerations are stressed in the curriculum and also as per the guidelines of the HEC and approved by the Board of Studies and Academic Council. The curriculum is revised on a regular basis to incorporate the modern trends and requirements associated with the field.

The graduates have the ability to apply knowledge of mathematics, probability & statistics, computer sciences, and engineering as it applies to the fields of Computer Engineering to meet desired needs. Qualified and experienced faculty is the strength of the department.

4.2 Mission of the Department

The mission is to impart the quality education in the field of Computer Engineering to produce qualified individuals possessing strong professional and ethical standards.

The CSE Department offers the following degree programs:
BE   (Computer System Engineering)
MS   (Computer Engineering)
PhD   (Computer Engineering)

4.3   Program Educational Objectives (BE Computer System Engineering)

PEO-01:   To attain fundamental knowledge, effective communication, and analytical skills required for design and development of computer engineering solutions.

PEO-02:   To apply critical thinking and problem-solving skills through modern tools & methods with enrich for professional development and research to explore new avenue of computer engineering and related studies.

PEO-03:   Enable to work individually and in collaboration to foster entrepreneur culture with professional attitude and sense of responsibilities towards society at large.

4.4 Faculty Members

Prof. Dr. H.M. Zahid Tunio
Designation: Professor/ Dean CEET
Qualification:
BE (Computer Systems Engineering), MUET, Jamshoro
ME (Information Technology), MUET, Jamshoro
PhD (Software Engineering), Beijing University of Post and Telecommunication (BUPT China)
PEC No. COMP/1412
Email: zahid.tunio@duet.edu.pk

Prof. Dr. Ramesh Kumar
Designation: Professor/ Chairman
Qualification:
BE (Computer Systems Engineering), MUET, Jamshoro
MS (Electronics and Communication Engineering), Hanyang University, South Korea
PhD (Electronics and Computer Engineering), Hanyang University, South Korea
PEC No. COMP/3771
Email: ramesh.kumar@duet.edu.pk

Engr. Fahad Iqbal
Designation: Assistant Professor
Qualification:
BS (Computer Engineering), SSUET, Karachi
MS (Mobile Computing), Hamdard University, Karachi
PEC No. COMP/2616
Email: fahad.iqbal@duet.edu.pk

Engr. Shamim ur Rehman
Designation: Assistant professor
Qualification:
BE (Electronic Engineering), NED University, Karachi
MS (Computer Engineering), PIMSA, Karachi
PEC No. Electro/12911
Email: Shamim.tariq@duet.edu.pk

Engr. Saba Khan
Designation: Assistant Professor
Qualification:
BE (Computer System Engineering), MUET, Jamshoro
ME (Information Technology), MUET, Jamshoro.
PEC No. COMP/6892
Email: saba.khan@duet.edu.pk

Engr. Maria Abdullah
Designation: Assistant Professor
Qualification:
BE (Computer System Engineering), NED UET, Karachi
MS (Telecommunication & Networks), MAJU, Karachi
PhD (In Progress), Dawood University of Engineering & Technology, Karachi
PEC No. COMP/1296
Email: maria.abdullah@duet.edu.pk

Engr. Motia Rani
Designation: Assistant Professor
Qualification:
BS (Computer Engineering), SSUET, Karachi
MS (Network and Telecommunication), MAJU, Karachi
PEC No. COMP/9309
Email: motiarani@live.com

Engr. Samia Aijaz
Designation: Assistant Professor
Qualification:
BE (Computer Systems Engineering), MUET, Jamshoro
ME (Communication Systems and Networks), MUET, Jamshoro.
PEC No. COMP/6009
Email: samiasiddiqui@duet.edu.pk

Engr. Sorath Mumtaz
Designation: Assistant Professor
Qualification:
BE (Electronics Engineering), MUET, Karachi
ME (Telecommunication Engineering), NED, Karachi
PEC No. ELECTRO/21382
Email: sorath.mumtaz@duet.edu.pk
Engr.sorath127@gmail.com

Engr. Abdul Manan Memon
Designation: Assistant Professor
Qualification:
BE (Computer System Engineering), DUET, Karachi
MS (Electronic Engineering), DUET, Karachi
PEC No. COMP/15011
Email: abdulmanan.memon@duet.edu.pk

Engr. Maria Bashir
Designation: Assistant Professor
(On Study Leave)
Qualification:
BE (Software Engineering), MUET,
Jamshoro.
ME (Information Technology),
MUET, Jamshoro.
PhD (In Progress), Sungkyunkwan
University, South Korea.
PEC No. COMP/7284
Email: maria.bashir@duet.edu.pk

Engr. Mansoor Ali
Designation: Lecturer
Qualification:
BE (Computer Systems
Engineering), QUEST, Nawabshah.
ME (Computer System Engineering),
NED UET, Karachi
PhD in progress Dawood University
of Engineering & Technology.
PEC No. COMP/11037
Email: mansoor_ali@duet.edu.pk

Engr. Farhan Ahmed
Designation: Lecturer (On Study Leave)
Qualification:
BE (Computer Systems
Engineering), MUET, Jamshoro
MS (Computer communication and
Networks), IBA, Sukkur
PhD (In Progress), Sungkyunkwan
University, South Korea
PEC No. COMP/8396
Email: farhan.umrani@duet.edu.pk

⭐ ⭐ ⭐

4.5   BE Computer System Engineering Course Catalogue

Course Code	Knowledge Area/Name of Subject	Theory	Lab	Req. Courses	Req. CH	Prerequisites
Foundation						
CSE-1101	Basic Electronics and Circuits	3	1	9	29	Applied Physics
CSE-1102	Computer Engineering Workshop	0	1			
CSE-2103	Digital Logic Design	3	1			Basic Electronics and Circuits
CSE-2104	Object Oriented Programming	3	1			Computer Programming
CSE-2105	Data Structures and Algorithms	3	1			Object Oriented Programming
CSE-2106	Computer Aided Engineering Design	0	1			Introduction to Information and Communication Technologies
CSE-2107	Computer Architecture & Organization	3	0			Digital Logic Design
CSE-3108	Signal and Systems	3	1			Basic Electronics and Circuits, Complex Variable & Transform
CSE-2109	Circuit Analysis	3	1			
Major Based Core Breadth						
CSE-3201	Microprocessor Based System Design	3	1	8	30	Computer Architecture & Organization
CSE-3202	Database Management System	3	1			Data Structures and Algorithms
CSE-3203	Operating Systems	3	1			Data Structures and Algorithms
CSE-3204	Web Engineering	2	1			Object Oriented Programming
CSE-3205	Data Communication and Computer Networks	3	1			Data Structures and Algorithms
CSE-3206	Digital System Design	3	1			Digital Logic Design
CSE-3207	Digital Signal Processing	3	1			Data Structures and Algorithms, Probability and Statistics
CSE-4208	Software Engineering	3	0			Data Structures and Algorithms
Major Based Core Depth						
CSE-4301	Parallel and Distributed Computing	3	0	4	14	Offered in Final Year Only
CSE-4302	Human Computer Interfacing	3	0			Offered in Final Year Only
CSE-4303	Data Science and Analytics	3	0			Offered in Final Year Only
CSE-4304	Information System	3	0			Offered in Final Year Only
CSE-4305	Software Project Management	3	0			Offered in Final Year Only
CSE-4306	Software Quality Assurance and Testing	3	0			Offered in Final Year Only
CSE-4307	Software Architecture and Engineering	3	0			Offered in Final Year Only
CSE-4308	Blockchain Technology and Applications	3	0			Offered in Final Year Only
CSE-4309	VLSI Design Technique	3	1			Offered in Final Year Only
CSE-4310	Mobile and Wireless Communication	3	1			Offered in Final Year Only
CSE-4311	Android Applications and Development	3	1			Offered in Final Year Only
CSE-4312	Embedded Systems	3	1			Offered in Final Year Only
CSE-4313	Digital Image Processing	3	0			Offered in Final Year Only
CSE-4314	Computer Network Security	2	1			Offered in Final Year Only
CSE-4315	Artificial Intelligence and Robotics	3	1			Offered in Final Year Only
Inter Disciplinary Elective						
ESE-2108	Instrumentation & Measurement	3	1	2	6	
ESE-3207	Industrial Automation and Robotics	3	1			
TE-4304	Optical Fiber Communication	3	1			
TE-4304	Next Generation Networks	3	0			
MAT-1101	Introduction to Engineering Materials	2	1			
MAT-4707	Nano Electronics	3	0			
Final Year Design Project						
CSE-4999	Final Year Design Project-I	0	3	1	6	
CSE-4999	Final Year Design Project-II	0	3			

MS Computer Engineering Course Catalogue

Core Courses

S. No.	Course Name	Credit Hours
1	Advanced Computer Networks	03
2	Advanced Software Engineering	03
3	Advanced Operating Systems	03
4	Advanced Algorithms Analysis and Design	03

Elective Courses

S. No.	Course Name	Credit Hours
01.	Software Testing and Quality Assurance	03
02.	Software and System Architecture	03
03.	Advanced Human Computer Interaction	03
04.	Formal Methods in Software Engineering	03
05.	Sematic Web	03
06.	Advanced Database Management Systems	03
07.	Advanced Software Project Management	03
08.	Web Engineering	03
09.	Thesis	06

Mission Statement of the PhD Program

To enhance the creativity of students and to provide an opportunity to perform research in a specialized area to contribute in their respective fields using engineering knowledge, skills, and mathematical formulation.

Program Objectives (PhD Program)

The program is intended to attain the following objectives:

PO1: To enable PhD students to extend knowledge through mathematical research and engineering solutions in their respective fields.

PO2: To enable PhD students to formulate potential research problems to find an innovative solution that will bring efficient ideas for the country's industrial processes.

PO3: To enable PhD students to work in multidisciplinary research environments by practicing moral and ethical values with multicultural teams to lead in their respective areas.

PhD Computer Engineering Course Catalogue

Core Courses

S. No.	Course Code	Course Name	Credit Hours
1	CSE-8201	Advanced Discrete Signal Processing	03
2	CSE-8202	Advanced Software Architecture	03
3	CSE-8203	Advanced Computer Networks	03
4	CSE-8204	Advanced Computer Architecture	03

Elective Courses

S. No.	Course Code	Course Name	Credit Hours
1	CSE-8701	Advanced Algorithm Design	03
2	CSE-8702	Advanced Artificial Intelligence	03
3	CSE-8703	Thesis Proposal and Dissertation Writing	03
4	CSE-8704	Next-generation Wireless Communication	03
5	CSE-8705	Advanced Human Computer Interaction	03
6	CSE-8706	Data warehousing and Mining	03
7	CSE-8707	Cloud Computing	03
8	CSE-8708	Advanced Database Systems	03
9	CSE-8709	Applied Machine Learning	03
10	CSE-8710	Applied Natural Language Processing	03
11	CSE-8711	Computer Vision	03
12	CSE-8712	Advanced Image Processing	03
13	CSE-8713	Advanced Embedded Systems	03
14	CSE-8714	Advanced Distributed systems	03
15	CSE-8715	Advanced Operating Systems	03
16	CSE-8716	Advanced Digital Systems	03
17	CSE-8717	Advanced Cryptography	03
18	CSE-8718	Modern Communication Channel Modeling	03
19	CSE-8719	Big Data Analytics	03
20	CSE-8720	Robotics & Human-Machine Interaction	03
21	CSE-8721	Project–I	03
22	CSE-8722	Project –II	03
23	CSE-8999	Doctoral Dissertation	03
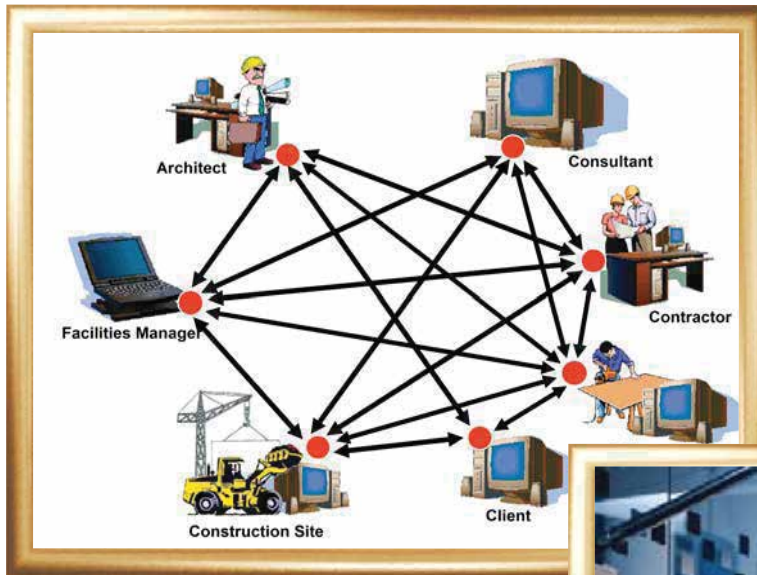
DEPARTMENT OF ELECTRONIC ENGINEERING

CHAPTER

5

ese.duet.edu.pk

5.1   About the Department

The Department of Electronic Engineering at Dawood University of Engineering & Technology (DUET), formerly known as Dawood College of Engineering & Technology, was established in 1964. It holds the distinction of being the pioneer in the field of Electronic Engineering in Pakistan. Due to the growing interest in its curriculum, it has consistently remained the most prominent department within the University. Located at the Main Campus of DUET in Karachi, the department boasts modern, well-equipped classrooms and laboratories. For over five decades, it has been producing technically proficient engineers equipped with practical skills who contribute meaningfully to industry, academia, and research. The department not only serves as a talent pipeline for industrial sectors but also actively supports research institutes in advancing higher education and fostering entrepreneurship. Its forward-looking curriculum ensures that graduates possess both technical expertise and strong communication skills, enabling them to uphold professional ethics, collaborate effectively, and solve real-world problems. As the oldest department of the university, it has developed strong linkages with industry and serves as a key solution provider through final-year student projects. Many of its alumni now hold executive positions in both local and multinational organizations, while fresh graduates continue to secure roles in public and private sectors, as well as in academia.

Electronic Engineering has wide range of application fields such as Circuit design, communication engineering, control systems, robotics, electrical power systems, Embedded Systems, industrial automation and biomedical applications. To excel in the research and development, and enhancement of quality education and relevance to the society, the department possesses highly qualified PhD faculty to meet the requirements and fundamental standards of Engineering. In addition, the department has running its post graduate degree programs for students to acquire expertise in different areas related to electronic engineering. Currently, the department offers three programs as follows.

1.   BE in Electronic Engineering
2.   MS in Electronic Engineering with the following specializations:
       i. Electronic System Engineering
       ii. Power Electronics
       iii. Communications and Signal Processing
3.   PhD in Electronic Engineering

5.2 Mission

To enhance the creative talents of students enabling them to develop skills to solve complex electronic engineering problems, promoting collaborative R&D and multidisciplinary activities.

5.3   Program Educational Objectives (BE Electronic Engineering)

PEO-1: Successful engineers with ample knowledge in the field of electronic engineering being capable of analyzing, designing, and developing innovative solutions to complex problems.

PEO-2: Responsible and ethical professionals exhibiting leadership and management skills for becoming effective entrepreneurs while contributing to societal and environmental improvement.

PEO-3: Graduates who pursue professional growth by taking up higher studies and excel in R&D through effective communication, collaboration, and teamwork while learning new technologies.

5.4 Faculty Members

Dr. Muhammad Rauf
Chairperson / Associate Professor
HEC approved PhD Supervisor PhD
(Electrical & Electronics
Engineering), Univ., Teknologi
Petronas, Malaysia.
MS (Electrical & Electronics
Engineering) Universiti Malaysia,
Pahang, Malaysia.
BE Electronic Engineering, DCET,
Karachi. PEC No. ELECTRO/9970

Dr. Abdul Sami Rajput
Associate Professor
HEC approved PhD Supervisor
PhD (Fusion Chemical), Hanyang
Univ., S. Korea.
MS (Electronic Engineering) NEDUET,
Karachi.
BE (Electronic Engineering) NEDUET,
Karachi.
PEC No. ELECTRO/8144

Engr. Dilip Kumar
Assistant Professor
PhD (Electronic Engineering),
DUET, Karachi (In Progress)
ME (Industrial Electronics)
NEDUET, Karachi
BE (Electronic Engineering) MUET,
Jamshoro.
PEC No. ELECTRO/7630

Engr. Arif Abdullah
Assistant Professor
PhD (Electronic Engineering), DUET,
Karachi   (In Progress)
MS (Industrial Automation) UET, Lahore.
BE (Electronic Engineering) SSUET,
Karachi. PEC No. ELECTRO/5133

Engr. Sohail Rana
Assistant Professor
PhD Computer Engineering, DUET,
Karachi (In Progress)
MS (Mobile Computing) UIT, Karachi
BE (Electronic Engineering) MUET,
Jamshoro PEC No.
ELECTRO/9939

Engr. Ghazala Bhutto
Assistant Professor
PhD (Electronic Engineering), DUET,
Karachi (In Progress)
ME (Embedded Systems) NED UET,
Karachi.
BE (Electronic Engineering) MUET,
Jamshoro. PEC No. ELECTRO/5133

Dr. Nadia Ansari
Assistant Professor
PhD (Electronic Engineering),
Hamdard Univ., Karachi
MS (Communication & Networks)
MAJU, Karachi
BE (Electronic Engineering) MUET,
Jamshoro
PEC No. ELECTRO/8173

Engr. Amna Najab
Assistant Professor
PhD (Electronic Engineering), DUET,
Karachi   (In Progress)
ME (Electronic Engineering) NED
UET, Karachi
BE (Electronic Engineering) MUET,
Jamshoro
PEC No. ELECTRO/8174

Engr. Bushra Akhtar
Assistant Professor
MS (Telecom. Engineering) MAJU, Karachi
BE (Electronic Engineering) MUET,
Jamshoro PEC No. ELECTRO/8172

Engr. M. Shahid
Assistant Professor
PhD (Electronic Engineering),
NEDUET, Karachi (In Progress)
MS (Electronic Engineering) UIT, Karachi
BE (Electronic Engineering)
NEDUET, Karachi PEC No.
ELECTRO/8608

Engr. Nusrat Ahmed
Assistant Professor
MS (Networks & Telecom) MAJU, Karachi
BE (Electronic Engineering) MUET, Jamshoro
PEC No. ELECTRO/8369

Engr. M. Ahsan
Assistant Professor
PhD Electronic Engineering DUET, Karachi (In Progress)
ME (Electronic Engineering) NED UET, Karachi
BE (Electronic Engineering) MUET, Jamshoro
PEC No. ELECTRO/8706

Engr. M. Ismail
Assistant Professor
PhD (Computer Engineering), DUET, Karachi   (In Progress)
ME (Electronic Engineering) NED UET, Karachi
BE (Electronic Engineering) DCET, Karachi
PEC No. ELECTRO/11535

Engr. Maqsood ur Rehman
Assistant Professor
PhD Electronic Engineering DUET, Karachi (In Progress)
ME (Electrical Engineering) Hamdard Univ., Karachi
BE (Electronic Engineering) PAF-KIET, Karachi
PEC No. ELECTRO/12039

Engr. Altaf Ahmed
Assistant Professor (On Study Leave)
ME (Telecom. Engineering) NEDUET, Karachi
BE (Electronic Engineering) SSUET, Karachi
PEC No. ELECTRO/11258

Engr. Majid Ahmed
Assistant Professor
ME (Industrial Automation), SSUET, Karachi
BE (Electronic Engineering) SSUET, Karachi
PEC No. ELECTRO/13277

Dr. M. Musharraf Alam
Assistant Professor
PhD (Electronic System Engineering), Hanyang Univ., S. Korea
B.E (Electronic Engineering) PAF-KIET, Karachi
PEC No. ELECTRO/14977

Engr. Mustafa Mohiuddin
Assistant Professor
PhD, Computer Engineering, DUET, Karachi (In Progress)
ME (Industrial Electronics) NEDUET, Karachi
BE (Electronic Engineering) DCET, Karachi
PEC No. ELECTRO/19617

Engr. Rohail Shaikh
Assistant Professor
PhD Electronic Engineering DUET, Karachi (In Progress)
ME (Electrical) Hamdard Univ., Karachi.
BE (Electronic Engineering) MUET, Karachi
PEC No. ELECTRO/22137

Engr. Talha Tariq
Assistant Professor
PhD Computer Engineering, DUET, Karachi (In Progress)
ME (Industrial Electronics) NEDUET, Karachi
BE (Electronic Engineering) DUET,Karachi
PEC No. ELECTRO/23317

Engr. Syed Waqar Alam
Assistant Professor
PhD, Computer Engineering DUET,
Karachi (In Progress)
MS (Communication) NUST-PNEC,
Karachi.
BE (Electronic Engineering) DUET,
Karachi
PEC No. ELECTRO/23295

Dr. Awais Gul Airij Gul
Assistant Professor
PhD (Electronics and Computer
Engineering), Univ., Teknologi,
Malaysia
MS (Electronics and Computer
Engineering), Univ., Teknologi,
Malaysia
BE (Electronic Engineering) MUET,

Engr. Amjad Hussain
Assistant Professor (On Study Leave)
PhD University of Deusto Bilbao
Spain (In Progress)
ME (Electronic System Engineering),
MUET, Jamshoro
BE (Electronic Engineering) MUET,
Jamshoro
PEC No. ELECTRO/25873

Engr. Sanjha Khan
Assistant Professor (On Study Leave)
PhD Polytechnic University of
Catalonia Spain (In Progress)
ME (Mechatronics Engineering)
MUET, Jamshoro
BE (Electronic Engineering) MUET,
Jamshoro
PEC No. ELECTRO/24168

Engr. Anum Nadir Ali
Lecturer
PhD (Computer Engineering)
DUET, Karachi (In Progress)
ME (Mechatronics Engineering)
MUET, Jamshoro
BE (Electronic Engineering) MUET,
Jamshoro
PEC No. ELECTRO/27649

Engr. Irshad Muhammad
Senior Lecturer
PhD Electronic Engineering DUET,
Karachi (In Progress)
MS (Electronic Engineering) DUET,
Karachi
BE (Electronic Engineering)
NEDUET, Karachi
PEC No. ELECTRO/8775

⭐⭐⭐

5.5 BE Electronic Engineering Course Catalogue

Course Code	Knowledge Area /Name of Subject	Theory	Lab	Req. Courses	Ref. CH	Prerequisites
Foundation						
ESE-1101	Linear Circuit Analysis	3	1	8	28	
ESE-1102	Electronic Workshop	0	1			
ESE-1104	Electronic Device & Circuit	3	1			Applied Physics
ESE-2105	Digital Logic Design	3	1			
ESE-2106	Electrical Network Analysis	3	1			Linear Circuit Analysis
ESE-2107	Electromagnetic Field Theory	3	0			Differential Equations
ESE-2108	Instrument & Measurement	3	1			
ESE-3109	Signal & Systems	3	1			Complex variable & Transforms
Major Based Core Breadth						
ESE-2201	Electronic Circuit Design	3	1	7	28	Electronic Devices & Circuit
ESE-2202	Microprocessor & Microcontroller Systems	3	1			Digital logic Design
ESE-2203	Electrical Machines	3	1			Electrical Network Analysis
CES-3204	Analog & Digital Communications	3	1			
ESE-3205	Control Engineering	3	1			Signals & System
ESE-3207	Industrial Automation & Robotics	3	1			Electronic Devices & Circuits
ESE-3208	Integrated Electronics	3	1			Electronic Circuit Design
Major Based Core Depth						
ESE-3301	Power Electronic	3	1	5	18	
ESE-3302	Digital Signal Processing and filter Design	3	1			
ESE-4301	Computer Networks & Data Communication	3	1			
ESE-4302	VLSI Design	3	1			
ESE-4303	Nuuromorphic Computing	3	0			
ESE-4304	Fuzy Logic and Simulations	3	1			
ESE-4305	Wireless and Mobile communication	3	0			
ESE-4306	Microwave Engineering	3	0			
ESE-4307	Bio-Medical Instrumentation	3	0			
ESE-4308	Pattern Recognition and Matching	3	0			
ESE-4309	Internet of Things (IOT)	2	1			
ESE-4310	Artificial Intelligence	2	1			
Inter Disciplinary Elective						
CSE-4312	Embedded Systems	3	1	2	7	
CSE-4313	Digital Image Processing	3	0			
TE-4304	Next Generation Networks	3	0			
TE-4304	Optical Fiber Communication	3	1			
MAT-4707	Nano Electronics	3	0			
Final Year Design Project						
ESE 4999		0	3	1	6	
ESE 4999		0	3			

5.6 MS Electronic Engineering

I.   Program Educational Objectives

PEO-1: To apply advanced theoretical and mathematical concepts using modern scientific tools for solving complex engineering problems.

PEO-2: To instill research culture in the MS students for identifying the research gaps and propose effective solutions to achieve the desired outcomes.

PEO-3: To enlighten the MS students about the norms of working in a multi-disciplinary environment along with upholding ethical values and academic integrity.

II. Core Courses

S. No.	Course Code	Course Name	Credit Hours
1	ESE-6201	Mathematical Methods for Engineers and Scientists	03
2	ESE-6202	Optimization Theory	03
3	ESE-6203	Linear System Theory	03
4	ESE-6204	Engineering Research Methodology	03

III. Elective Courses

S. No.	Course Code	Course Name	Credit Hours
1	ESE-ES-6701	Semiconductor Devices and Technology	03
2	ESE-ES-6702	Introduction to MEMS Design and Micromachining	03
3	ESE-ES-6703	Nanotechnology	03
4	ESE-ES-6704	Microprocessor Based System Design	03
5	ESE-ES-6705	Optical Engineering	03
6	ESE-ES-6706	Instrumentations and Systems	03
7	ESE-ES-6707	Linear Integrated Circuits	03
8	ESE-ES-6708	Robotics and Industrial Automation	03
9	ESE-ES-7709	Advanced VLSI	03
10	ESE-ES-7710	Advanced FPGA Systems	03
11	ESE-ES-7711	Advanced Digital Control	03
12	ESE-ES-7712	Modelling and Simulations of Dynamic Systems	03

IV. Elective Courses (Communication and Signal Processing)

S. No.	Course Code	Course Name	Credit Hours
1	ESE-CSP-6701	Stochastic Processes	03
2	ESE-CSP-6702	Electromagnetic Field Theory	03
3	ESE-CSP-6703	Wave Propagation and Antennas	03
4	ESE-CSP-6704	Wireless Sensor Networks	03
5	ESE-CSP-6705	Wireless Communication Channel Modelling	03
6	ESE-CSP-6706	Software Defined Radio Networks	03
7	ESE-CSP-6707	LTE Mobile Communication	03
8	ESE-CSP-6708	Information and Coding Theory	03
9	ESE-CSP-7709	Advanced wireless Communications	03
10	ESE-CSP-7710	Advanced Optical Communications	03
11	ESE-CSP-7711	Advanced Digital Signal Processing	03
12	ESE-CSP-7712	Advanced Digital Communication	03

V.   Elective Courses (Power Electronics)

S. No.	Course Code	Course Name	Credit Hours
1	ESE-PE-6701	Power Electronic Devices	03
2	ESE-PE-6702	AC-DC and DC-AC Converters	03
3	ESE-PE-6703	Switch Mode Converter Analysis & Design	03
4	ESE-PE-6704	Power Quality and Management	03
5	ESE-PE-7705	Control of DC Machine Drives	03
6	ESE-PE-7706	Control of AC Machine Drives	03
7	ESE-PE-7707	Control for Renewable Energy Systems	03
8	ESE-PE-7708	Advance Power Electronics	03

5.7   PhD Electronic Engineering

I.   Program Educational Objectives

PEO-1:   To utilize the hypothetical ideas, mathematical and engineering principles to address the technological challenges of their respective field for innovation.

PEO-2:   To develop the research culture that will invoke efficient ideas, and their transformation to the scientific innovation for academia and industry in novel ways.

PEO-3:   To prepare the student to work in a multi-disciplinary environment, provide leadership in their area, practice moral and ethical values, and upholding the academic integrity that can impact the society.

II.   Program Compulsory Courses

S. No.	Course Code	Course Name	Credit Hours
1	ESE-8201	Advanced Digital System Design	03
2	ESE-8202	Advanced Semiconductor Device Theory	03
3	ESE-8203	Advanced Embedded Systems Design	03
4	ESE-8204	Advanced Digital Signal Processing	03

III.   Elective Courses

S. No.	Course Code	Course Name	Credit Hours
1	ESE-8701	Advanced Algorithm Design and Optimization	03
2	ESE-8702	Advanced Artificial Intelligence and Application	03
3	ESE-8703	Advanced Power Electronics and Applications	03
4	ESE-8704	Next-Generation Wireless Communication	03
5	ESE-8705	Modern Control Theory	03
6	ESE-8706	Networked Dynamic Systems	03
7	ESE-8707	Advanced Non-Linear Control Systems	03
8	ESE-8708	Power System Stability and Dynamics	03
9	ESE-8709	Power System Transients	03
10	ESE-8710	Data acquisition, processing and applications	03
11	ESE-8711	Industrial automation and applications	03
12	ESE-8712	Advanced Image Processing and application	03
13	ESE-8713	Advanced IoT systems and applications	03
14	ESE-8714	Sensor and System	03
15	ESE-8715	Advanced DC-DC Converters and applications	03
16	ESE-8716	Modern Communication Channel Modeling	03
17	ESE-8717	Smart Grid Networks	03
18	ESE-8718	Robotics & Human-Machine Interaction	03
19	ESE-8719	Wireless Power Transmission	03
20	ESE-8720	Artificial Neural Networks and application	03
21	ESE-8721	VLSI Design	03
22	ESE-8722	Wireless Sensor Networks	03
23	ESE-8723	Antenna and wave propagation	03
24	ESE-8724	Bioinformatics	03
25	ESE-8725	Micro Electromechanical Systems (MEMS)	03
26	ESE-8726	Fuzzy Logic and application	03
27	ESE-8727	Renewable energy systems	03
28	ESE-8728	Independent Project Study	03
29	ESE-8999	Doctoral Dissertation	03

DEPARTMENT OF TELECOMMUNICATION ENGINEERING

CHAPTER

6

6.1 About the Department

This Department offers four year Degree perform in the field of Information Security Engineering (BS-ISE), recognized by the Pakistan Engineering Council (PEC), designed to equip students with essential skills for thriving in today's dynamic technology landscape. This four-year program offers a robust curriculum combining theoretical knowledge with hands-on experience. Key learning outcomes include proficiency in multiple programming languages, comprehensive understanding of operating systems and networking, mastery of database management systems and wireless communication networks, and exposure to advanced IT applications. The BS ISE program incorporates industrial training, providing students with practical insights into engineering processes and fostering the development of professional skills crucial for success in software houses, data centers, IT sectors, networking, telecommunications, and electronic media industries globally. It equips graduates with the skills to address complex information security challenges in an increasingly interconnected world, preparing them for vital roles such as Information Security Specialist, Risk Management Consultant, Data Protection Officer, Compliance Analyst, etc.

Alongside classroom theory lessons, the students are provided complete practical training in operating systems and networks, database management systems, wireless communication networks and IT applications, in the state of art laboratories with the help of software-defined and hardware-defined techniques. The students are given hands-on experience in the following dedicated laboratories:

• High Performance Computing Lab-I   • High Performance Computing Lab-II
• Advanced Simulation Lab   • Basic Simulation Lab
• Computer and Simulation Lab   • Basic Electronics and Telecommunication Lab
• Network Security Lab

The department enjoys the facility of university central library and has access to the latest engineering field textbooks, which is sufficient to quench students' thirst for knowledge. The academic curriculum for studies caters to the needs of modern standards and has been developed by experts and eminent scholars in the field of security engineering. This will help students' rise to the optimum academic achievement standards and serve the nation in the field of security engineering with better achievements. The department also offer Master and PhD program in the field of Telecommunication Engineering.

6.2 Mission

To impart a state-of-the-art education in Information Security Engineering program in line with national needs for productive careers and leadership roles in industry, academia, and entrepreneurial sectors by providing a conducive environment for teaching, learning, and research for achieving excellence with great emphasis on ethical values and social responsibility.

6.3 Program Educational Objectives (BS Information Security Engineering)

PEO 1: To produce information security engineers with in-depth knowledge and research in the field of data and cyber security for contributing technically to industry and higher education

PEO 2: To produce Information Security Engineers proficient in analytical analysis and solving complex challenges of emerging information space through modern tools and techniques.

PEO 3: To produce Information Security Engineers with techno-prenurial mindset, leadership qualities and effective communication skills.

PEO 4: To produce responsible Information Security Engineers having high moral values yet capable of designing and developing creative information security solutions for society

6.4 Faculty Members

Engr. Dr. Irfan Ali Chandio
Chairperson/Associate Professor
HEC Approved Supervisor
B.E (Telecommunication) MUET, Jamshoro
M.E. (Telecommunication) NEDUET, Karachi
Ph.D. (Electrical and Communication), Malaysia
PEC No. TELE/2545

Engr. Prem Singh Rajput
Assistant Professor
B.E (Electronics) NED UET, Karachi
M.E (Telecommunication & Control Eng.), MUET, Jamshoro
PEC No. Electro/4963

Engr. Matloob Ahmed Khan
Assistant Professor
B.E (Electrical), KUET, Baluchistan
M.S (Telecommunication), HU, Karachi
PEC No. Elect/27613

Engr. Dr. Ayesha Amir Siddiqi
Assistant Professor
B.E (Electrical) NED UET, Karachi
M.E (Telecommunication) NED UET, Karachi
Ph.D. (Electronics Engineering), NED UET, Karachi
PEC No. Elect/22090

Engr. Dr. Rizwan Iqbal
Assistant Professor
B.E (Electronic), DCET, Karachi
MS (Networks & Telecom), MAJU, Karachi
Ph.D. (Communication Systems and Networks), HU, Karachi
PEC No. Electro/17543

Engr. Dr. Zeeshan Ali Memon
Assistant Professor
B.E (Electronic), MUET, Jamshoro
MS (Telecommunication), Italy
Ph.D. (Antenna & Satellite) Telecommunication, Italy
PEC No. Electro/11035

Engr. Kashif Saleem
Assistant Professor
BE (Electronics), NED-UET, Karachi
M.S (Electronic), DUET, Karachi
Ph.D. in progress, (Computer Engineering), DUET, Karachi
PEC No. Electro/8596

Engr. Saima Khadim
Assistant Professor
B.E (Telecommunication) DUET
ME (Telecommunication) NED UET, Karachi.
Ph.D. in progress, (Electronics), DUET, Karachi
PEC No. Tele/6654

Engr. Aziza Fazal Bhutto
Assistant Professor
BS (Electrical), Sukkur IBA.
ME (Telecommunication) NED UET, Karachi.
PEC No. Elect/42200

Engr. Dr. M. Hashim Dahri
Assistant Professor
B.E (Telecommunication) MUET, Jamshoro
M.S (Electrical and Communication), Malaysia
Ph.D. (Electrical and Communication), Malaysia
PEC No. TELE/2561

Engr. Dr. Faisal Khan Khaskheli
Lecturer
B.E (Telecommunication) MUET,
Jamshoro
M.E (Electronics), MUET,
Jamshoro
Ph.D. (Telecommunication),
MUET, Jamshoro
PEC No. Tele/2549

Engr. Dr. Areez Khalil Memon
Lecturer
B.E (Electronic), MUET,
Jamshoro
MSc (Advanced Electronics &
Electrical), UK
Ph.D. (Optical Engineering),
China
PEC No. Electro/12840

6.5 BS Information Security Engineering

	List of Program Courses					
Foundation Courses						
IS-2101	Operating Systems and Systems Programming	3	1	Computer Programming/Computer Fundamentals &Programming	8	30
IS-2102	Computer and Communication Network	3	1			
IS-2103	Digital Logic Design	3	1			
IS-2104	Computer Architecture and Organization	3	0			
IS-1105	Object Oriented Programming	3	1	Computer Programming		
IS-2106	Data Structure and Algorithm	3	1			
IS-2107	Signal and Systems	3	1	Complex variable and transform		
IS-2108	Database Management and Design	3	1			
IS-3109	Probability and Statistics for Engineers	3	0			
Major based core Breadth						
IS-2201	Information Security	3	0		6	22
IS-2202	Cryptography and Network Security	3	1	Information Security		
IS-3203	Computer Forensics	3	1	Operating Systems and Systems Programming		
IS-3204	Software and Systems Security	2	1	Information Security/ Operating Systems and Systems Programming		
IS-3205	Mobile Security/End point Security	3	1			
IS-4206	Artificial Intelligence	3	1			
Major based core depth						
IS-3301	Security Management and Risk Assessment	3	0		5	18
IS-4302	IOT Security	3	1	Computer Communication Networks		
IS-4303	Cyber Crime and Law	3	0	Professional Ethics		
IS-4304	Network Forensics	3	0	Ethical Hacking/ C omputer Communication Networks		
IS-4305	Cyber Threat Intelligence	3	0			
IS-4306	Secure Wireless Communications	3	0			
IS-4307	Database Security	3	1			
IS-4308	Secure Intelligent Systems	3	0			
IS-4309	Ethical Hacking	3	1			
IS-4310	Data Protection and Disaster Recovery	3	1			
IS-4311	Cloud Architecture and Security	3	1	Computer Communication Networks /Operating Systems and Systems Programming		
FYDP (Industrial/Innovative/Creative Projects)						
IS-4999	FYDP-I	0	3	Offered in Final Year Only	1	6
IS-4999	FYDP-II	0	3	Offered in Final Year Only		
Interdisciplinary Electives						
IDE-x401	Cyber Security	3	0		2	6
IDE-x402	Digital Signal Processing	3	1			
IDE-x403	Digital Communication Systems	3	1			
IDE-x404	Microprocessor and Microcontroller Systems	3	1			
IDE-x405	Electronic Devices and Circuits	3	1			
IDE-x406	Electrical Network Analysis	3	1			
IDE-x407	Cloud Computing	2	0			
IDE-x408	Digital Image Processing	2	1			

6.6 MS Telecommunication Engineering

MS Telecommunication is offered in the following specializations.

- (i) RF Engineering
- (ii) Telecommunication Networks

I. Program Educational Objectives

PEO-1: To furnish students with knowledge and skills to plan, design and operate modern Telecommunication Systems.

PEO-2: To furnish graduates with the skill to carry out research in Telecommunication Engineering and relevant fields.

PEO-3: To acquire and enhance new technologies for improved Telecommunication Systems Operation.

II. CORE COURSES

a. RF Engineering

S. No.	Course Code	Course Name	Credit Hours
1	TE-6201	Advanced Engineering Electromagnetics	03
2	TE-6202	Antenna Theory and Design	03
3	TE-6203	Microwave Active Devices	03

b. Telecommunication Networks

S. No.	Course Code	Course Name	Credit Hours
1	TE-6204	Stochastic Processes	03
2	TE-6205	Telecom Networks	03
3	TE-6206	Network Optimization	03

III. ELECTIVE COURSES

a. RF Engineering

S. No.	Course Code	Course Name	Credit Hours
1	TE-6701	Advanced Engineering Electromagnetics	03
2	TE-6702	Antenna Theory and Design	03
3	TE-6703	Microwave Active Devices	03
4	TE-6704	RF Circuit Design	03
5	TE-6705	Radar Engineering	03
6	TE-6706	Advanced Wireless Communications	03
7	TE-6707	Principles of Wireless Propagation Channel Modelling	03
8	TE-6708	Radio Frequency and Mobile Network Planning	03

6.7   PhD Telecommunication Engineering

PEO-1:   To furnish students with deep knowledge in theoretical framework of a broad spectrum of topics relating to Telecommunication Systems and Engineering.

PEO-2:   To furnish graduates with the skill to carry out far-reaching research in Telecommunication Engineering and related fields.

PEO-3:   To enhance new technologies for improved Telecommunication Systems Operation.

II.   Program Compulsory Courses

S. No.	Course Code	Course Name	Credit Hours
1	TE-8201	Advanced Communication Systems and Networks	03
2	TE-8202	Advanced Network Planning and Management	03
3	TE-8203	Advanced Optical Communication and Networks	03
4	TE-8304	Advanced Wireless Sensor Networks	03

III.   Elective Courses *

S. No.	Course Code	Course Name	Credit Hours
1	TE-8701	Advanced Image Processing	03
2	TE-8702	Channel Modeling	03
3	TE-8703	Network Optimization	03
4	TE-8704	Advanced Digital Communication	03
5	TE-8705	5G Communications	03
6	TE-8706	Advanced Intelligent Networks	03
7	TE-8707	Broadband Communication	03
8	TE-8708	Smart Grid Networks	03
9	TE-8709	Network Security	03
10	TE-8810	Advanced Computer Networks	03
11	TE-8811	IoT Based Smart Networks	03
12	TE-8812	LTE Mobile Communication	03
13	TE-8813	Cognitive Radio Networks	03
14	TE-8814	Multiple Antenna Communication Systems	03
15	TE-8815	Detection and Estimation Theory	03
16	TE-8816	Advanced Cryptography	03
17	TE-8817	Project–I	03
18	TE-8818	Project –II	03
19	TE-8919	Doctoral Dissertation	03

S. No.	Course Code	Course Name	Credit Hours
9	TE-7709	LTE Mobile Communication	03
10	TE-7710	Cognitive Radio Networks	03
11	TE-7711	Multiple Antenna Communication Systems	03
12	TE-7712	Detection and Estimation Theory	03
13	TE-7713	Special Topics in RF Engineering	03

b. Telecommunication Networks

S. No.	Course Code	Course Name	Credit Hours
1	TE-6714	Telecom Networks	03
2	TE-6715	Stochastic Processes	03
3	TE-6716	Network Optimization	03
4	TE-6717	Optical Communication and Networks	03
5	TE-6718	Advanced Communication System	03
6	TE-6719	Telecom Management Network	03
7	TE-7720	Broadband Communication	03
8	TE-7721	Smart Grid Networks	03
9	TE-7722	Network Security	03
10	TE-7723	Wireless Sensor Networks	03
11	TE-7724	Advanced Computer Networks	03
12	TE-7725	IoT Based Smart Networks	03
13	TE-7726	Special Topics in Telecommunication Networks	03

IV. GENERAL ELECTIVE COURSES

S. No.	Course Code	Course Name	Credit Hours
1	TE-7727	Management of Research & Development	03
2	TE-7728	Advanced Mathematical Modelling and Simulation	03
3	TE-7729	Research Methodology	03
4	TE-7730	Information Theory and Coding	03
5	TE-7731	Advanced Network Programming	03

DEPARTMENT OF COMPUTER SCIENCE

CHAPTER

7

7.1 About the Department

The Department of Computer Science has been established in 2019. Since then we had started Bachelor of Computer Science (BSCS) four-year degree program and comprises on eight semesters, BSCS program is getting more popularity among the student's community.

After achieving success in BSCS program then we have started further two disciplines such as Artificial Intelligence and Cyber Security, also these two programs are very popular and demanded programs and have got successes in them. All These programs are the emerging technologies fulfilling the present demands of the market. Insha'Allah our new coming programs Data Science and IT will groom successful in future and we will be able to meet the requirement of quality education in our beloved country Pakistan.

The computer science department has very experienced and qualified 08 faculty members. The Department has 04 PhD faculty member from core computing science and computing engineering side and 04 faculty members having MS degree in computer science and engineering. The basic aim of Computer Science is to provide quality education in its domain and elaborate the various areas which are concerned with the state of art technologies.

The mission and scope of the Department is an ideal place to start a career in the field of computational and groundbreaking technologies in cutting edge. Our aim is to produce experienced and competent young scientists who are committed to make positive contributions to the country and the society in the field of computer science with learning, programming in theoretical and practical knowledge.

7.2 Mission

To train a new generation of computer science leaders and innovators through cutting edge research and industry partnership to propel technical progress and economic success.

Program Educational Objectives (PEOs)

PEO-1: Equip students with a robust foundation in computer science principles and cutting- edge technologies, fostering their ability to design, develop, and implement innovative software.

PEO-2: Cultivate a research-oriented mindset and strong critical thinking abilities, enabling them to engage in research, address complex and real-world problems.

PEO-3: Promote a culture of collaboration with industry partners, ensuring that students understand the social and ethical implications of their work with strong communication skills.

7.3 Faculty Members

Dr. Atif Jamil Shaikh
Professor / Dean I & CS
PhD (CE), UTP, Malaysia
MS (CE), UTM, Malaysia
BE (CSE), SSUET, Karachi
PEC No. COMP/2547

Dr. Fida Hussain Khoso
Associate Professor / Chairperson
HEC Approved Supervisor
PhD (CS), Indus University, Karachi
MS (SE), MAJU, Karachi
BS (CS), University of Sindh

Dr. Asma Sanam Larik
Assistant Professor
PhD. (CS), IBA, Karachi
MS (CS), FAST, Karachi
BS (CS), FAST, Karachi

Dr. Sarwat Iqbal
Assistant Professor,
HEC Approved Supervisor
PhD. (CS) , FUUAST, Karachi
MCS , FUUAST, Karachi
BSc., FUUAST, Karachi

Dr. Syed Ali Asgher
Assistant Professor
HEC Approved Supervisor
PhD. (Optoelectronics), HBU, Hong Kong
ME (Electronics Science and Technology) XJTU, China
BE (Electronics) DUET, Karachi
PEC No. ELCTRO/ 17559

Engr. Muhammad Imran Alvi
Assistant Professor
MS (Computer Networks),
Wichita State University, KS, USA
BE (Electrical Eng) NEDUET, Karachi
PEC No. ELECT-15587

Mr. Irfan Ahmed
Lecturer
MS (Computer Technology), South-east University, China
BS (SE) University of Sindh

Mr. Muhammad Saleem
Lecturer
MS CS), IBA Sukkur, Sukkur
BS (CS) University of Sindh

Engr. Poonam KK
Lecturer
PhD. SMIU Karachi (In progress)
ME (CSE) QUEST, Nawabshah
BE (CSE(QUEST, Nawabshah
PEC No. COMP/08144

Engr. Sofia Hajano
Lecturer
PhD. MUET Jamshoro (In progress)
ME (Information Technology) , MUET, Jamshoro
BE (CSE), MUET, Jamshoro
PEC No. COMP/17170

Engr. Dinar Khowaja
Lecturer
ME (Electronic Systems Eng.) MUET, Jamshoro
BE (Electronics Eng. MUET, Jamshoro
PEC No. ELECTRO/15336

7.4 BS Computer Science Course Catalogue

Course Code	Knowledge Area/Name of Subject	Theory	Lab	Req. Courses	Req. CH	Prerequisites
Computing Core						
CS-1101	Programming Fundamentals	3	1	12	40	
CS-1102	Object Oriented Programming	3	1			Programming Fundamentals
CS-1103	Digital Logic Design	2	1			
CS-2104	Database Systems	3	1			
CS-2105	Data Structures	3	1			Object Oriented Programming
CS-2106	Information Security	2	1			
CS-2107	Artificial Intelligence	2	1			
CS-2108	Computer Networks	2	1			
CS-2109	Software Engineering	3	0			
CS-2110	Computer Organization & Assembly Language	2	1			Digital Logic Design
CS-3111	Operating Systems	2	1			
CS-4112	Analysis of Algorithms	3	0			Data Structures
Domain Core						
CS-2201	Theory of Automata	2	1	6	18	
CS-2202	Advance Database Management Systems	2	1			Database Systems
CS-3203	HCI and Computer Graphics	2	1			
CS-3204	Computer Architecture	2	1			Computer Organization & Assembly Language
CS-3205	Compiler Construction	2	1			Theory of Automata
CS-3206	Parallel & Distributed Computing	2	1			Operating System
Domain Elective						
CS-4301	Web Technologies	3	1	7	21	Offered in Final Year Only
CS-4302	Mobile Application Development-I	2	1			Offered in Final Year Only
CS-4303	Advanced Programming	2	1			Object Oriented Programming
CS-4305	Web Engineering	2	1			Web Technologies
CS-4306	Cyber Security	2	1			Information Security
CS-4307	Software Testing and Quality Assurance	2	1			Offered in Final Year Only
CS-4308	Mobile Application Development-II	2	1			Mobile Application Development-I
CS-4309	Natural Language Processing	3	0			Offered in Final Year Only
CS-4310	Object Oriented Analysis & design	3	0			Offered in Final Year Only
CS-4311	Deep Learning	3	0			Offered in Final Year Only
CS-4312	Cloud Computing	2	1			Offered in Final Year Only
CS-4313	Computer Graphics	3	0			Offered in Final Year Only
CS-4314	Cryptography	3	0			Offered in Final Year Only
CS-4315	Wireless Communication System	3	1			Offered in Final Year Only
CS-4316	Embedded Systems	2	0			Offered in Final Year Only
CS-4317	Software Requirement Engineering	2	0			Offered in Final Year Only
CS-4318	Software Project Management	3	0			Offered in Final Year Only
CS-4319	Internet of Things	2	0			Offered in Final Year Only
CS-4320	Data mining	2	0			Offered in Final Year Only
CS-4321	Introduction to Data Science	3	0			Offered in Final Year Only
Supporting Elective						
IDE-x401	Machine Learning	2	1	1	3	
IDE-x402	Computer Vision	2	1			
CS-4999	Final Year Project-I	0	3	1	6	Offered in Final Year Only
CS-4999	Final Year Project-II	0	3			Offered in Final Year Only

7.5 BS Artificial Intelligene

The Department of Artificial Intelligence is focused on providing a dedicated platform for AI-focused education. The aim is to foster innovation and advancement in this rapidly evolving field. We strongly believe in the transformative power of artificial intelligence across various industries and domains. With this recognition, we are committed to equipping our students with the skills and knowledge needed to excel in the AI landscape, both locally and globally. This enables us to offer our students a detailed understanding of the latest technologies, industry trends, and best practices.

In this program, we prioritize nurturing AI talents with global competitiveness and practical capabilities. We provide a holistic approach to education, combining theoretical foundations of computer science. Our carefully designed curriculum covers core principles such as AI, machine learning, deep learning, natural language processing, computer vision, MetaVerse, and other essential areas.

We invite ambitious individuals who are passionate about AI to join us on this exciting journey. The program offers a supportive and intellectually stimulating environment for growth. Together, let's shape the future of artificial intelligence and make groundbreaking discoveries. Join our program, where ideas flourish, boundaries are pushed, and the transformative impact of AI on society becomes a reality.

Dawood University Vision

The University of Relevance Leading to Techno-preneurial Excellence.

Dawood University Mission

Dawood University of Engineering & Technology aims to invest in human capital for accelerated advancement in engineering knowledge and practices, new frontiers in R&D hence creating a knowledge led economy and a better future for generations to come.

Mission of the BS-AI Program

Empowering ethical innovation through AI-focused education, fostering intelligent problem-solving skills and catalyzing interdisciplinary collaboration to ignite transformative impact on society where technopreneurship can flourish.

Program Educational Objectives

PEO-1: To attain a comprehensive understanding of Artificial Intelligence using computer science principles enabling them to craft innovative solutions to address societal challenges yet advanc-ing for lifelong learning.

PEO-2: To attain proficiency with the concepts of Artificial Intelligence and its applications in collabo-rative multidisciplinary environments through complex problem-solving skills.

PEO-3: To be able to contribute to the national and global research initiatives in a leadership role high-lighting the transformative potential and implementation of Artificial Intelligence to improve quality of life.

PEO-4: To be able to understand ethical principles and professional yet responsible practices in AI implementation ensuring safe and quality services in the best interests of individuals, business-es, and society.

7.6 Faculty Members

Dr. Adnan Waqar
Chairperson/ Associate Professor/ Program Head
HEC Approved Supervisor
PhD (Embedded Systems), ECU, Australia
ME (Computer Systems), NEDUET, Karachi
BE (Electronic Engineering), SSUET, Karachi
Membership: PEC, Engineers Australia

Engr. Imran Khan
Assistant Professor
PhD. (In Progress), DUET, Karachi
M.S (Information and Network Security), MAJU , Karachi
BE Telecommunication Engineering, SSUET, Karachi

Ms. Noor ul Huda
Lecturer
PhD (In Progress), NEDUET, Karachi
MS (Computer Science), NEDUET, Karachi
BS (Computer Science), University of Karachi

Engr. Bushra Sheikh
Lecturer
PhD in Electrical Engineering from NUST (in progress)
M.E (Communication Systems and Networks) MUET, Jamshoro
B.E (Telecommunication Engineering) MUET, Jamshoro

Engr. Rahila Shah
Lecturer
PhD (In Progress), DUET, Karachi
MS (Electronic Systems Engineering), MUET, Jamshoro
BE (Electronic Engineering), MUET, Jamshoro

Engr. Hamza Farooqi
Lecturer
MS (Artificial Intelligence), University of Essex, UK
BE (Software Engineering), NEDUET, Karachi

Alignment of PEOs with Program Mission and Departmental Mission

PEO #	Detailed Description	Keywords	Program Mission	Departmental Mission
1	To attain a comprehensive understanding of Artificial Intelligence using computer science principles enabling them to craft innovative solutions to address societal challenges yet advancing for lifelong learning.	Problem solving, critical thinking, Innovation, lifelong learning, and a sense of purpose	✓	✓
2	To attain proficiency with the concepts of Artificial Intelligence and its applications in collaborative multidisciplinary environments through complex problem-solving skills.	Multidisciplinary collaboration, effective communication	✓	✓
3	To be able to contribute to the national and global research initiatives in a leadership role highlighting the transformative potential and implementation of Artificial Intelligence to improve quality of life.	Global contributions, societal contributions, leadership, initiatives	✓	✓
4	To be able to understand ethical principles and professional yet responsible practices in AI implementation ensuring safe and quality services in the best interests of individuals, businesses, and society.	Ethics and sense of Responsibility	✓	✓

Program Learning Outcomes

1. Academic Education: To prepare graduates as computing professionals.

2. Knowledge for Solving Computing Problems: Apply knowledge of computing funda-mentals, knowledge of a computing specialization, and mathematics, science, and domain knowledge appropriate for the computing specialization to the abstraction and conceptu-alization of computing models from defined problems and requirements.

3. Problem Analysis: Identify, formulate, research literature, and solve complex computing problems reaching substantiated conclusions using fundamental principles of mathemat-ics, computing sciences, and relevant domain disciplines.

4. Design/ Development of Solutions: Design and evaluate solutions for complex compu-ting problems, and design and evaluate systems, components, or processes that meet spec-ified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations

5.   Modern Tool Usage: Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations.

6.   Individual and Team Work: Function effectively as an individual and as a member or leader in diverse teams and in multi-disciplinary settings.

7.   Communication: Communicate effectively with the computing community and with so-ciety at large about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and un-derstand clear instructions.

8.   Computing Professionalism and Society: Understand and assess societal, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practice

9.   Ethics: Understand and commit to professional ethics, responsibilities, and norms of pro-fessional computing practice.

10. Life-long Learning: Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional.

S#	Program Learning Outcomes (PLOs)	PEOs			
		1	2	3	4
1	Academic Education	✓	✓		
2	Knowledge for Solving Computing Problems	✓	✓		
3	Problem Analysis	✓	✓		
4	Design/ Development of Solutions	✓	✓	✓	
5	Modern Tool Usage		✓	✓	✓
6	Individual and Team Work		✓	✓	
7	Communication			✓	✓
8	Computing Professionalism and Society		✓	✓	✓
9	Ethics			✓	✓
10	Life-long Learning	✓		✓	✓

II.   BS Artificial Intelligence Course Catalogue

Course Code	Knowledge Area/Name of Subject	Theory	Lab	Req. Courses	Req. CH	Prerequisites
Computing Core						
CS-1101	Programming Fundamentals	3	1	12	40	
CS-1102	Object Oriented Programming	3	1			Programming Fundamentals
CS-1103	Digital Logic Design	2	1			
CS-2104	Database Systems	3	1			
CS-2105	Data Structures	3	1			Object Oriented Programming
CS-2106	Information Security	2	1			
CS-2107	Artificial Intelligence	2	1			
CS-2108	Computer Networks	2	1			
CS-2109	Software Engineering	3	0			
CS-3110	Computer Organization & Assembly Language	2	1			Digital Logic Design
CS-3111	Operating Systems	2	1			
CS-4112	Analysis of Algorithms	3	0			Data Structures
Domain Core						
AI-2201	Programming for AI	2	1	6	18	Artificial Intelligence
AI-3202	Machine Learning	2	1			Artificial Intelligence
AI-3203	Artificial Neural Networks & Deep Learning	2	1			Programming for AI
AI-3204	Knowledge Representation & Reasoning	2	1			Artificial Intelligence
AI-3205	Parallel & Distributed Computing	2	1			
AI-3206	Computer Vision	2	1			Artificial Neural Networks & Deep Learning
Domain Elective						
AI-4301	Artificial Intelligence of Things	2	1	7	21	Offered in Final Year Only
AI-4302	Reinforcement Learning	2	1			Offered in Final Year Only
AI-4303	Web Technologies	2	1			Offered in Final Year Only
AI-4304	Knowledge Based Systems	3	1			Offered in Final Year Only
AI-4305	Advanced Statistics	3	0			Probability and Statistics, Offered in Final Year Only
AI-4306	Speech Processing	2	1			Offered in Final Year Only
AI-4307	Embedded Systems	3	0			Offered in Final Year Only
AI-4308	HCI & Computer Graphics	2	1			Offered in Final Year Only
AI-4309	Fuzzy Systems	2	1			Offered in Final Year Only
AI-4310	Swarm Intelligence	2	1			Offered in Final Year Only
AI-4311	Agent Based Modelling	2	1			Offered in Final Year Only
AI-4312	Data Mining	2	1			Advanced Statistics, Offered in Final Year Only
AI-4313	Deep Learning	2	1			Offered in Final Year Only
AI-4314	Cyber Security	2	1			Offered in Final Year Only
AI-4315	Advance Digital Logic Design	3	0			Offered in Final Year Only
AI-4316	Cloud Computing	2	1			Offered in Final Year Only
AI-4317	Natural language processing	2	1			
Supporting Elective						
IDE-x401	Discrete Structures	3	0	1	3	
IDE-x402	Theory of Automata	3	0			
IDE-x403	Introduction to Data Science	2	1			
IDE-x404	Introduction to Cyber Security	2	1			
AI-4999	Final Year Project-I	0	3	1	6	Offered in Final Year Only
AI-5000	Final Year Project-II	0	3			Offered in Final Year Only

7.7 BS Cyber Security

I. About the Program

The Program of Cybersecurity is committed to upholding a high standard of excellence in teaching, research, and service. Our objective is to give students thorough preparation in the concepts and theories of cybersecurity so they can pursue successful careers in industry or research. The program has cutting-edge labs and gives students access to the most recent gear and software to ensure that they are knowledgeable about new technologies. We also provide possibilities for internships so that students can put their knowledge to use in the workplace. The program has developed solid contacts with a number of national and international institutes as well as close ties with business partners. Our alumni are well-equipped to seek further study in their discipline or to enter the workforce as knowledgeable Cybersecurity professionals. Faculty members in the Program of Cybersecurity are dedicated to service through continuing education programs and research that advances the area, in addition to their duties for program quality and professional development. To make sure that we are fulfilling our objective, the program routinely evaluates students, instructors, and the program itself. We have swiftly established a reputation for providing topnotch instruction and research in the field of cybersecurity, and the rapidly expanding IT sector's continued demand for qualified cybersecurity workers offers good job prospects for our graduates.

II. Program Educational Objectives (BS Cyber Security)

PEO-1: To articulate an in-depth understanding of the fundamental concepts of risk management, threat detection, cryptography, and network security.

PEO-2: To fulfill desired constraints, develop, assess, evaluate, and implement resilient and secure cyber-physical systems.

PEO-3: To work professionally for a variety of industries including academia, research & development, techno-preneurship, and maintain ethical standards in professional, social, and environmental matters.

PEO-4: To demonstrate leadership attributes and management skills, enabling them to take on employment with supervisory responsibility.

7.8 Faculty Members

Dr. Asif Aziz Memon
Assistant Professor/ Program Head PhD (Computer Vision & Image Processing) Seoul, South Korea
ME (Information Technology), MUET, Jamshoro
BE (Computer Systems) MUET, Jamshoro
PEC No. Comp/08462

Dr. Abdullah Lakhan
Associate / Professor
PhD (Computer Science & Tech.)
South East University, China
ME (Information Technology), MUET, Jamshoro
BE (Computer Systems) MUET, Jamshoro
PEC No. Comp/08462

Dr. Ahmed Sikander
Assistant Professor
PhD (Telecom), Hamdard University, Karachi
MS (Electrical), BTH, Sweden
BSc (Eelctronic Engineering) SSUET, Karachi

Engr. M. Faisal Memon
Lecturer
ME (Industrial Electronics), NED UET, Karachi
BE (Eelctronic Engineering) MUET, Jamshoro

Engr. Sania
Lecturer (On Study Leave)
ME (Electronic System Engineering), MUET, Jamshoro
BE (Electronic Engineering), MUET, Jamshoro

Ms. Maleeha Anwar
Lecturer
MPhil, (Computer Science), University of Karachi, Karachi
MCS, (Computer Science), University of Karachi, Karachi
BCS, (Computer Science), University of Karachi, Karachi

7.9 BS Cyber Security Course Catalogue

Course Code	Knowledge Area/Name of Subject	Theory	Lab	Req. Courses	Req. CH	Prerequisites
Computing Core						
CS-1101	Programming Fundamentals	3	1	12	40	
CS-1102	Object Oriented Programming	3	1			Programming Fundamentals
CS-1103	Digital Logic Design	2	1			
CS-2104	Database Systems	3	1			
CS-2105	Data Structures	3	1			Object Oriented Programming
CS-2106	Information Security	2	1			
CS-2107	Artificial Intelligence	2	1			
CS-2108	Computer Networks	2	1			
CS-2109	Software Engineering	3	0			
CS-2110	Computer Organization & Assembly Language	2	1			Digital Logic Design
CS-3111	Operating Systems	2	1			
CS-4112	Analysis of Algorithms	3	0			Data Structures
Domain Core						
CY-2201	Cyber Security	2	1	6	18	
CY-2202	Information Assurance	2	1			
CY-3203	Network Security	2	1			
CY-3204	Secure Software Design and Development	2	1			
CY-3205	Digital Forensics	2	1			
CY-3206	Parallel & Distributed Computing	2	1			
Domain Elective						
CY-4301	Vulnerability Assessment & Reverse Engineering	2	1	7	21	Offered in Final Year Only
CY-4302	Basic Electronics	2	1			Offered in Final Year Only
CY-4303	Hardware Security	2	1			Offered in Final Year Only
CY-4304	Malware Analysis	2	1			Offered in Final Year Only
CY-4305	HCI & Computer Graphics	2	1			Offered in Final Year Only
CY-4306	Penetration Testing	2	1			Offered in Final Year Only
CY-4307	Wireless and Mobile Security	2	1			Offered in Final Year Only
CY-4308	Advanced Digital Logic Design	2	1			Offered in Final Year Only
CY-4309	Embedded Systems	2	1			Offered in Final Year Only
CY-4310	Cyber Law & Cyber Crime (Cyber Warfare)	2	1			Offered in Final Year Only
CY-4311	Cryptography	3	0			Offered in Final Year Only
CY-4312	Cryptanalysis	3	0			Offered in Final Year Only
CY-4313	Wireless Network Security	3	0			Offered in Final Year Only
CY-4314	Cyber Warfare	2	0			Offered in Final Year Only
CY-4315	IoT Security	2	0			Offered in Final Year Only
CY-4316	Web Application Security	2	0			Offered in Final Year Only
CY-4317	Cyber Security Tool Development	2	0			Offered in Final Year Only
CY-4318	Operating System Security	2	0			Offered in Final Year Only
CY-4319	Cyber Security for AI	2	0			Offered in Final Year Only
CY-4320	Embedded Systems Security	3	0			Offered in Final Year Only
CY-4321	Security of Control Systems	2	0			Offered in Final Year Only
CY-4322	Cyber Security Professional Ethics	2	0			Offered in Final Year Only
CY-4323	Control System Security	2	1			Offered in Final Year Only
Supporting Elective						
IDE-x401	Computer Architecture	2	1	1	3	
IDE-x402	Theory of Automata	3	0			
IDE-x403	Natural Language Processing	2	1			
CY-4999	Final Year Project-I	0	3	1	6	Offered in Final Year Only
CY-5000	Final Year Project-II	0	3			Offered in Final Year Only

7.10 BS Data Science

The Program of BS Data Science is committed to upholding a high standard of excellence in teaching, research, and service. Our objective is to give students thorough preparation in the concepts and theories of data science so they can pursue successful careers in industry or research. The program has cutting-edge labs and gives students access to the most recent softwares to ensure that they are knowledgeable about new technologies. We provide internships to every student so that they can put their knowledge to use in the workplace. The program has developed solid contacts with a number of national and international institutes as well as close ties with business partners. Faculty members in the Program of Data Science are dedicated to service through continuing education programs and research that advances the area, in addition to their duties for program quality and professional development.

7.11 Department Mission

To produce highly skilled data scientist professionals who drive innovation, ethical practices and continual advancement in the field of data science, contributing to an export-led economy and nurturing technopreneurial endeavors.

7.12 Program Educational Objectives PEOs (BS Data Science)

PEO-1 Developing a profound grasp of data science principles, terminologies, tools, processing and methods for effective professional application in various disciplines.

PEO-2 Enabling to create, innovate, implement and assess data driven solutions for complex problems with interdisciplinary approach.

PEO-3 Fostering continual learning, communication proficiency and self-improvements to adapt to evolving data science challenges especially in the context of AI.

PEO-4 Enabling to exhibit ethical, social and professional responsibility emphasizing data privacy, security, quality and authenticity for industries, research, development and technopreneurship.

7.12 Program Educational Objectives PEOs (BS Data Science)

Dr. Zulfiqar Hussain Pathan
Program Head / Assistant Professor
Data Science / BIS
HEC Approved Supervisor
PhD in Management Science & Engineering (BUPT, China)
MS Technology Innovation Management (MUET, Jamshoro)
BS Computer Science (US, Jamshoro)

Engr. Jamal Shams Khanzada
Lecturer
Data Science
MSc in Electrical Engineering (University of Gujrat, Gujrat)
BSc in Electrical Engineering (University of Gujrat, Gujrat)
PEC# Elect-73990

Engr. Seema Bughio
Lecturer
MS (Data Engineering & Information Management), NED UET, Karachi.
BE (Computer System Engineering), DUET, Karachi.
PEC# COMP/21836

7.13 Course Catalogue

Course Code	Knowledge Area/Name of Subject	Theory	Lab	Req. Courses	Req. CH	Prerequisites
Computing Core						
CS-1101	Programming Fundamentals	3	1			
CS-1102	Object Oriented Programming	3	1			Programming Fundamentals
CS-1103	Digital Logic Design	2	1			
CS-2104	Database Systems	3	1			
CS-2105	Data Structures	3	1			Object Oriented Programming
CS-2106	Information Security	2	1	12	40	
CS-2107	Artificial Intelligence	2	1			
CS-2108	Computer Networks	2	1			
CS-2109	Software Engineering	3	0			
CS-2110	Computer Organization & Assembly Language	2	1			Digital Logic Design
CS-3111	Operating Systems	2	1			
CS-4112	Analysis of Algorithms	3	0			Data Structures
Domain Core						
DS-2201	Introduction to Data Science	2	1			
DS-2202	Advanced Statistics	2	1			
DS-3203	Data Mining	2	1	6	18	
DS-3204	Data Visualization	2	1			
DS-3205	Data Warehousing & Business Intelligence	2	1			
DS-3206	Parallel & Distributed Computing	2	1			
Domain Elective						
DS-3301	Advanced Database Mangement Systems	3	0			
DS-3302	Big Data Analytics	3	0			
DS-3303	Machine Learning	3	0			
DS-3304	Artificial Neural Networks	3	0			
DS-3305	Human Computer Interaction	3	0			
DS-3306	Natural Language Processing	3	0			
DS-3307	Mobile Application Development	2	1			
DS-3308	Web Techologies	2	1			
DS-3309	Game Development	3	0	7	22	
DS-3310	Cyber Security	3	0			
DS-4311	Business Process Analysis	3	0			Offered in Final Year Only
DS-4312	Architecture of Data Science	3	0			Offered in Final Year Only
DS-4313	Visual Programming	3	0			Offered in Final Year Only
DS-4314	Digital Marketing	3	0			Offered in Final Year Only
DS-4315	Cloud Computing	3	0			Offered in Final Year Only
DS-4316	Game Design	3	0			Offered in Final Year Only
DS-4317	Digital Forensics	3	0			Offered in Final Year Only
DS-4318	Cyber Warfare	3	0			Offered in Final Year Only
Supporting Elective						
DS-3401	Computer Architecture	2	1	1	3	
DS-3402	Theory of Automata	3	0			
Final Year Project						
DS-4999	Final Year Project-I	0	3	1	6	Offered in Final Year Only
DS-4999	Final Year Project-II	0	3			Offered in Final Year Only

DEPARTMENT OF INDUSTRIAL ENGINEERING & MANAGEMENT

CHAPTER

8

iemo@duet.edu,pk

8.1 About the Department

The department of Industrial Engineering & Management offers 4 years degree program in the discipline of Industrial Engineering & Management. Industrial Engineering is about making the best use of available resources such as Men, Money, Machines, Materials and Methods to increase the productivity & quality, lower the cost, assure safety of personnel & optimum utilization of machine resources, create, and maintain good working environment to improve efficiency & effectiveness.

8.2 Mission

To provide high quality engineering education, design, research, and application focused with prevailing demands of country's industrial sector in particular and global competitive demand in general in the areas of industrial engineering, project management, industrial manufacturing, works measurement, industrial automation, methods engineering & resources optimization.

8.3 Program Educational Objectives (BE Industrial Engineering & Management)

PEO-1: To produce graduates having high quality state of the art education in advanced Industrial Engineering.

PEO-2: To produce graduates who conduct research that expands knowledge in the areas of advanced Industrial Engineering.

PEO-3: To produce graduates with high quality of professionalism and entrepreneurship with capability to convert plans into practices.

8.4 Faculty Members

Prof. Dr. Zahid Hussain Hulio
Professor/Chairman
PhD Industrial Mgt, China
ME Industrial Mgt., NEDUET, Karachi.
BE Industrial Engg. & Mgt. MUET, Jamshoro
PEC No. INDUS/471

Prof. Dr. Zeeshan Ali
Professor (On Leave)
PhD Mechanical & Mechatronics Engineering,
University of Nottingham, UK
B.E. Mechanical Engineering, UET Peshawar
PEC No. MECH/18236

Engr. Rano Khan Wassan
Associate / Professor
PhD, Industrial Engineering & Management, MUET, Jamshoro
MSc Mechanical, UTP, Malaysia,
BE Industrial Engineering & Management, MUET, Jamshoro
PEC No. INDUS/01308

Dr. Muhammad Dawood Idrees
Associate Professor
MS & PhD Industrial Management Engineering Hanyang University, South Korea
BE Industrial Engineering & Management, DUET, Karachi
PEC No. INDUS/2306

Engr. Ghulam Sarwar Chandio
Assistant Professor
PhD, Industrial Engineering, MUET, Jamshoro (In Progress)
ME Industrial Management, NEDUET, Karachi
BE Industrial Engineering & Management, MUET, Jamshoro
PEC No. INDUS/613

Engr. Imran Khan Shaikh
Assistant Professor
PhD, Industrial Engineering, DUET, Karachi (In Progress)
ME Industrial Engineering & Management, MUET, Jamshoro
BE Industrial Engineering & Management, MUET, Jamshoro
PEC No. INDUS/999

Dr. Shahzada M. Umair Khan
Assistant Professor
PhD Industrial Engineering, Hanyang University, South Korea
MSc Industrial Engineering, Hanyang University, South Korea
BE Industrial Engineering, NEDUET, Karachi
PEC No. INDUS/777

Engr. Darya Khan
Assistant Professor
PhD, Industrial Engineering, DUET, Karachi (In Progress)
ME Manufacturing Engineering, NEDUET, Karachi
BE Industrial Engineering & Management, MUET PEC No. INDUS/725

Engr. Ali Akbar Jaffery
Assistant Professor
PhD, Industrial Engineering, DUET, Karachi (In Progress)
MSc Mechanical, UTP, Malaysia
B.E. Industrial Engineering & Management, MUET, Jamshoro
PEC No. INDUS/1264

Engr. Jansher Ansari
Assistant Professor
PhD, Industrial Engineering, DUET, Karachi (In Progress)
ME Engineering Management, Politenico di Torino, Italy
BE Electronics & Computers, Politenico di Torino, Italy
PEC No. ELECTRO/28456

Engr. Kanwal Zehra
Assistant Professor (On Study Leave)
PhD, Industrial Engineering &
Management, MUET, Jamshoro
(In Progress)
ME Industrial Engineering &
Management, DUET, Karachi
BE Industrial Engineering &
Management, DUET, Karachi
PEC No. INDUS/2631

Engr. Nabeel Ahmed Siddiqui
Assistant Professor
PhD, Industrial Engineering, DUET,
Karachi (In Progress)
ME Industrial Engineering &
Management, DUET, Karachi
BE Industrial Engineering &
Management, DCET, Karachi
PEC No. INDUS/1297

Engr. Ghulam Mujtaba Khan
Lecturer
PhD, Industrial Engineering, DUET,
Karachi (In Progress)
BE Industrial Engineering &
Management, DCET, Karachi
PEC No. INDUS/950

Engr. Umair Sarwar
Assistant Professor
PhD, Industrial Engineering, DUET,
Karachi (In Progress)
MSc Mechanical Engineering,
Universiti Teknologi PETRONAS,
Malaysia
BE Industrial Engineering &
Management, MUET, Jamshoro
PEC No. INDUS/1142

Engr. Shahnawaz
Lecturer
ME MEM, NEDUET, Karachi
BE (Mechanical Engineering), QUEST,
Nawabshah
PEC No. MECH/25354

Engr. Shuaib Kaka
Lecturer
PhD, Industrial Engineering &
Management, MUET, Jamshoro (In
Progress)
MSc Mechanical, UTP, Malaysia,
BE Industrial Engineering &
Management, MUET, Jamshoro
PEC No. INDUS/1280

Engr. Malikah
Junior Lecturer (Study leave)
ME Industrial Engineering &
Management, DUET, Karachi
BE Industrial Engineering &
Management, DUET, Karachi
PEC No. INDUS/3162

8.5 BE Industrial Engineering & Management Course Catalogue

Course Code	Knowledge Area/Name of Subject	Theory	Lab	Req. Courses	Req. CH	Prerequisites
Engineering Foundation						
INE-1101	Engineering Drawing & CAD	2	1	10	34	
INE-1102	Basic Industrial Engineering	3	0			
INE-1103	Workshop Practice	0	2			
INE-2104	Materials Engineering	3	1			
INE-2105	Mechanics of Materials	3	1			Materials Engineering
INE-2106	Metrology & Statistical Quality Control	3	1			
INE-3107	Operations Research	3	1			Linear Algebra
INE-3108	Work-study & Methods Engineering	3	1			Basic Industrial Engineering
INE-3109	Production Planning & Control	2	0			
INE-4110	Machine Design & CAD/CAM	3	1			Engineering Drawing & CAD
Major Based Core Breadth						
INE-3201	Lean Manufacturing (Elective-I)	3	0	6	20	
INE-3202	Industrial Maintenance & Safety	3	0			
INE-3203	Managerial Accounting (Elective-II)	3	0			
INE-3304	Design of Mechanism	3	0			
INE-3305	Design of Experiments	3	0			
INE-4204	Human Factors Engineering	2	1			Work-study & Methods Engineering
INE-4206	Human Resource Development (Elective-IV)	3	0			
INE-4207	Computer Integrated Manufacturing (Electicve - V)	3	1			Production Planning & Control
INE-4208	Supply Chain & Logistics (Elective-VI)	3	0			Production Planning & Control
INE-4209	Total Quality Management (Elective-VII)	3	0			
INE-4210	Marketing Management (Elective-VIII)	2	0			
Major Based Core Depth						
INE-1301	Manufacturing Processes	3	1	5	16	Offered in Final Year Only
INE-2302	Instrumentation & Control	2	1			Offered in Final Year Only
INE-3303	Operations of Manufacturing Systems	3	0			Offered in Final Year Only
INE-4304	Industrial Facilities Design	3	0			Offered in Final Year Only
INE-4305	Production System Design	3	0			Offered in Final Year Only
Inter Disciplinary Elective						
IDE-x401	Engineering Thermodynamics	3	1			Applied Physics
CS-4321	Introduction to Data Science	3	0			
CS-4319	Internet of things	2	0			
IDE-x402	Fluid Mechanics	2	1	2	7	Applied Physics
IDE-x403	Industrial Automation	2	1			Instrumentation & Control
INE-4999	Final Year Design Project-I	0	3	1	6	Offered in Final Year Only
INE-4999	Final Year Design Project-II	0	3			Offered in Final Year Only

8.6 MS Industrial Engineering & Management

I.   Program Educational Objectives

PEO-1,   Engineering Knowledge, and Skills: To apply advanced scientific concepts using modern tools for solving complex engineering problems.

PEO-2,   Research and Development: To cultivate research culture to identifying the research gaps and propose effective solutions to achieve the desired outcomes.

PEO-3,   Professional Practice and Ethics: To enlighten the norms of working in a multi-disciplinary environment along with upholding ethical values and academic integrity.

II.   Core Courses

S. No.	Course Code	Course Name	Credit Hours
1	INE-6201	Project Management	03
2	INE-6202	Total Quality Management	03
3	INE-6203	Supply Chain Management	03
4	INE-6204	Research Methodology	03

III.   Compulsory Courses in Lieu of Thesis

S. No.	Course Code	Course Name	Credit Hours
1	INE-6301	Six Sigma Methodologies	03
2	INE-6302	Lean and Agile Manufacturing	03

IV.   Elective Courses (Engineering Management)

S. No.	Course Code	Course Name	Credit Hours
1	INE-6701	Organization Behavior	03
2	INE-6702	Energy Management	03
3	INE-6703	Operation Research	03
4	INE-6704	Cost & Management Accounting	03
5	INE-6705	Computer Integrated Manufacturing	03
6	INE-6706	Business Forecasting	03
7	INE-6707	Warehouse Management and Distribution Network	03

V. Elective Courses (Industrial Automation)

S. No.	Course Code	Course Name	Credit Hours
1	INE-6708	Robotics	03
2	INE-6709	Computer Vision	03
3	INE-6710	Linear Control System	03
4	INE-6711	Pattern Recognition	03
5	INE-6712	Data acquisition and control	03
6	INE-6713	Modeling and Simulation	03
7	INE-6714	Non-linear control system	03
8	INE-6715	Distributed control systems	03
9	INE-6716	Robotics and intelligent sensors	03
10	INE-6717	Programmable logic controllers	03
11	INE-6718	Industrial Process Control System	03
12	INE-6719	Industrial Instrumentation	03
13	INE-6720	SCADA and Distributed control system	03

VI. Elective Courses (Project Management)

S. No.	Course Code	Course Name	Credit Hours
1	INE-6721	Project Risk Management	03
2	INE-6722	Statistical Methods in Project Management	03
3	INE-6723	Project Communication Reporting and Presentation Management	03
4	INE-6724	Project Quality Management	03
5	INE-6725	Human Resource Management	03
6	INE-6726	Project Management Software	03
7	INE-6727	Advance Financial Management	03
8	INE-6728	Business and Corporation Strategy	03

VII. Elective Courses (Supply Chain Management)

S. No.	Course Code	Course Name	Credit Hours
1	INE-6729	Vendor Selection and Development	03
2	INE-6730	Production Planning & Inventory Control	03
3	INE-6731	Customer Relationship Management	03
4	INE-6732	Managing Risks in Supply Chains	03
5	INE-6733	Warehouse Management and Distribution Network	03
6	INE-6734	Management Information Systems	03
7	INE-6735	Vender and Procurement Management	03
8	INE-6736	ERP System Design and Implementation	03

8.7 PhD Industrial Engineering

I.   Program Educational Objectives

PEO-1,   Engineering Knowledge, and Skills: To apply advanced scientific concepts using modern tools for solving complex engineering problems.

PEO-2,   Research and Development: To cultivate research culture to identifying the research gaps and propose effective solutions to achieve the desired outcomes.

PEO-3,   Professional Practice and Ethics: To enlighten the norms of working in a multi-disciplinary environment along with upholding ethical values and academic integrity.

II.   Program Compulsory Courses

S. No.	Course Code	Course Name	Credit Hours
1	INE-8201	Statistical Methods in Project Management	03
2	INE-8202	Advanced Six Sigma Methodologies	03
3	INE-8203	Advanced Supply Chain Management	03
4	INE-8204	Advanced Lean and Agile Manufacturing	03

III.   Elective Courses

S. No.	Course Code	Course Name	Credit Hours
1	INE-8701	Advances Statistics and Data Mining	03
2	INE-8702	Thesis and Manuscript Writing Skills	03
3	INE-8703	Advances Topics in Engineering Management	03
4	INE-8704	Strategic Planning and Decision Making	03
5	INE-8705	Automated Manufacturing Systems	03
6	INE-8706	Human Factors Engineering	03
7	INE-8707	Organization Behaviour	03
8	INE-8708	Energy Management	03
9	INE-8709	Operation Research	03
10	INE-8710	Cost & Management Accounting	03
11	INE-8711	Computer Integrated Manufacturing	03
12	INE-8712	Business Forecasting	03
13	INE-8713	Warehouse Management and Distribution Network	03
14	INE-8714	Robotics	03
15	INE-8715	Computer Vision	03
16	INE-8716	Linear Control System	03
17	INE-8717	Pattern Recognition	03
18	INE-8718	Data acquisition and control	03

S. No.	Course Code	Course Name	Credit Hours
19	INE-8719	Modeling and Simulation	03
20	INE-8720	Non-linear control system	03
21	INE-8721	Distributed control systems	03
22	INE-8722	Robotics and intelligent sensors	03
23	INE-8723	Programmable logic controllers	03
24	INE-8724	Industrial Process Control System	03
25	INE-8725	Industrial Instrumentation	03
26	INE-8726	SCADA and Distributed control system	03
27	INE-8727	Project Risk Management	03
28	INE-8728	Project Communication Reporting and Presentation Management	03
29	INE-8729	Project Quality Management	03
30	INE-8730	Human Resource Management	03
31	INE-8731	Project Management Software	03
32	INE-8732	Advance Financial Management	03
33	INE-8733	Business and Corporation Strategy	03
34	INE-8734	Vendor Selection and Development	03
35	INE-8735	Production Planning & Inventory Control	03
36	INE-8736	Customer Relationship Management	03
37	INE-8737	Managing Risks in Supply Chains	03
38	INE-8738	Warehouse Management and Distribution Network	03
39	INE-8739	Management Information Systems	03
40	INE-8740	Vender and Procurement Management	03
41	INE-8741	ERP System Design and Implementation	03
42	INE-8742	Project–I	03
43	INE-8743	Project –II	03
44	INE-8999	Doctoral Dissertation	30

DEPARTMENT OF ENERGY & ENVIRONMENT ENGINEERING

CHAPTER

9

9.1   About the Department

The Department of Energy and Environment Engineering was established in 2010, the department offers 4-year Bachelor's program that integrates engineering principles with environmental stewardship and energy innovation.

Currently, the department has a team of highly qualified and experienced faculty members who are actively engaged in teaching, research, and consultancy. Their expertise spans various areas including renewable energy systems, environmental pollution control, energy efficiency, waste management, and sustainable development.

To support academic and research activities, the department has established five laboratories equipped with modern instruments and experimental setups. These laboratories include Hi-Tech Laboratory, Water and Wastewater Laboratory, Environment Laboratory, Energy Laboratory, and Computer Laboratory.

The department maintains strong links with industry, government agencies, and research institutions, which facilitates internships, collaborative projects, and job placements. Over the years, it has produced a growing number of outstanding graduates who are contributing significantly to the energy, environment, and sustainability sectors. Many of them have pursued advanced degrees, while others have joined prestigious organizations across the public and private sectors.

The Department of Energy and Environment Engineering remains committed to advancing knowledge, fostering innovation, and preparing graduates who can lead the transition toward a more sustainable and resilient future.

9.2 Mission

To disseminate and integrate knowledge of engineering, science, and technology that enables our students to develop sustainable energy systems and solutions for the future applying innovative applications of engineering using modern tools by investigating, communicating in interdisciplinary ways to identify society problems and to lead, motivate and work in teams to manage energy and environmental problems and progressing in the profession through lifelong learning attitude.

9.3   Program Education Objectives (B.E Energy and Environment Engineering)

PEO-1.   Possess advanced expertise in energy and environmental engineering, enabling graduates to apply innovative knowledge and modern tools in science, engineering, and technology.

PEO-2.   Conduct interdisciplinary research to develop a thorough understanding of complex engineering problems and create solutions that demonstrate professional ethics

PEO-3.   Empowering graduates with lifelong learning, teamwork, and management skills to tackle environmental and socio-economic challenges and foster sustainable solutions

Department offers the following degree program:

B.E. (Energy and Environment Engineering)
BS (Environmental Science)
MS (Environmental Engineering)
PhD (Environmental Engineering)

9.4 Faculty Members

Prof. Dr. Ghulamullah Maitlo
Professor / Dean IMEE
PhD (Environmental Engineering),
MUET, Jamshoro
M.E (Energy and Environment
Engineering) QUEST, Nawabshah.
B.E (Chemical Engineering) MUET,
Jamshoro
PEC No. CHEM/ 06201

Dr. Zubair Ahmed
Associate Professor / Chairperson
PhD (Environment and Energy),
South China University of
Technology, Guangzhou, China.
M.E (Environmental Engineering),
NED UET, Karachi.
B.E (Energy and Environment
Engineering), QUEST, Nawabshah.
PEC No. Enviro/00041 (P.E)

Dr. Ghulam Mujtaba
Associate Professor
Post-doc Institute of Environment
and Ecology
Tsinghua Shenzhen International
Graduate School, Shenzhen, China
PhD (Environmental Engineering)
Myongji University, South Korea
MS (Environmental Engineering)
Myongji University, South Korea
BS (Environmental Science)
COMSATS. Abbottabad

Dr. Ayaz Ali Shah
Assistant Professor
PhD (Energy Technology) Aalborg
University Denmark.
M.E (Environmental Engineering and
Management) IEEM, MUET,
Jamshoro
BE (Environmental Engineering),
MUET, Jamshoro.
PEC No. Enviro/306 (P.E)

Dr. Tahir Hussain Seehar
Assistant Professor
PhD (Energy Technology) Aalborg
University Denmark.
M.E (Environmental Engineering),
NED UET, Karachi.
B.E (Energy and Environment
Engineering), QUEST, Nawabshah.
PEC No. Enviro/254 (P.E)

Dr. Abdul Fatah Soomro
Assistant Professor
PhD (Environmental engineering)
Tsinghua University Beijing, PR
China.
M.E (Environmental Engineering and
Management) IEEM, MUET,
Jamshoro
B.E (Textile Engineering) MUET,
Jamshoro
PEC No. Textile/01331

Dr. Aurangzeb Junejo
Assistant Professor
PhD (Environmental Engineering),
SKKU South Korea
M.E (Environmental Engineering and
Management), MUET, Jamshoro
B.E (Industrial Engineering and
Management), MUET, Jamshoro
PEC No. INDUS/00814.

Engr. Siraj Ahmed
Assistant Professor
PhD (in progress) (Environmental
Engineering), MUET Jamshoro
M.E (Energy Engineering) Hamdard
University, Karachi
B.E (Energy and Environment
Engineering) QUEST, Nawabshah
PEC No. Enviro/00093

Engr. Waseem Ali
Assistant Professor
M.E (Energy Engineering), Hamdard
University, Karachi
B.E (Mechanical Engineering),
MUET SZAB Campus Khairpur Mir's
PEC No. Mech/28827

Engr. Muhammad Irfan Rajput
Assistant Professor (Study Leave)
PhD (In progress) (Environmental
Engineering) Tianjin University, PR
China.
M.E (Energy and Environmental
Management) European University of
Flensburg Germany
B.E (Energy and Environment
Engineering) QUEST, Nawabshah
PEC No. Enviro/00101

Engr. Khuda Bukhsh
Assistant Professor (Study Leave)
PhD (In progress) (Power Engineering and Engineering Thermophysics) Xi'an Jiaotong University, PR China
M.E (Energy Engineering), Hamdard University, Karachi.
B.E (Energy and Environment Engineering) QUEST, Nawabshah.
PEC No. Enviro/00107

Engr. Aamir Raza
Assistant Professor
M.E (Energy Engineering), Hamdard University Karachi.
B.E (Energy and Environment Engineering) QUEST, Nawabshah
PEC No. Enviro/00386 (P.E)

Engr. Asif Abbasi
Assistant Professor
M.S. (Environmental Science) University of Karachi
M.S. (Transportation Engineering) NED University, Karachi
B.E. (Civil Engineering) NED University, Karachi
PEC No. Civil / 18268

Engr. Aisha Memon
Assistant Professor (Study Leave)
PhD (in progress) (Environmental Engineering), University of Arizona, USA
ME (Environmental Science and Engineering), Tsinghua University, Beijing, P. R. China.
BE (Environmental Engineering), MUET, Jamshoro.
PEC No. Enviro/0043

Dr.-Ing. Ihsanullah Sohoo
Lecturer (On Leave)
PhD (Institute of Environmental Technology and Energy Economics) Hamburg University of Technology, Hamburg, Germany.
M.E (Environmental Engineering) NED UET, Karachi
B.E (Energy & Environment Engineering) QUEST, Nawabshah.
PEC NO. Enviro/0007

Engr. Irfan Abbasi
Lecturer
PhD (in progress) (Environmental Engineering), SKKU, South Korea.
ME (Environmental Engineering & Management), MUET, Jamshoro
BE (Textile Engineering), MUET, Jamshoro
PEC No. Textile/00361

9.5 BE Energy & Environment Engineering Course Catalogue

Course code	Knowledge area/ Name of Subject	Th	Lab	Required Courses	Required CH	Pre-requisites
Foundation						
EE-1101	Introduction to Environmental Engineering	3	0	7	21	
EE-1102	Energy Resources & Environment	3	0			
EE-1103	Engineering Mechanics	3	0			
EE-1104	Engineering Drawing & CAD	2	1			
EE-2105	Introduction to Energy system Engineering	3	0			
EE-2106	Fluid Mechanics	2	1			
EE-3107	GIS and Remote sensing	2	1			
Major Based Core (Breadth)						
EE-2201	Bio energy engineering	2	1	10	33	
EE-2202	Fuels and combustion	3	1			Introduction to Energy system Engineering
EE-2203	Water supply and treatment methods	3	1			Introduction to Environmental Engineering
EE-2204	Energy Conservation and management	3	0			Introduction to Environmental Engineering
EE-3205	Environmental Laws and policies	2	0			Introduction to Environmental Engineering
EE-3206	Hydro Power Engineering	3	0			Energy Resources & Environment
EE-3207	Energy Policy and Management	2	0			
EE-3208	Wastewater engineering	3	1			Introduction to Environmental Engineering
EE-3209	Solid Waste Management	3	1			Energy Resources & Environment
EE-4210	Air and noise pollution control	3	1			Introduction to Environmental Engineering
Major Based Core (Depth)						
EE-4301	Integrated water resources management	3	0	7	21	Offered in Final Year Only
EE-4302	Ecological management	2	0			Offered in Final Year Only
EE-4303	Solar & Wind Energy Technologies	3	1			Energy Resources & Environment
EE-4701	Environmental Impact Assessment	3	0			Offered in Final Year Only
EE-4702	Health Safety & Environment	3	0			Offered in Final Year Only
EE-4703	Cleaner production technologies	3	0			Offered in Final Year Only
EE-4704	Climate change and disaster management	3	0			Offered in Final Year Only
EE-4705	Waste management	3	0			Offered in Final Year Only
EE-4706	Green energy technologies	3	0			Offered in Final Year Only
EE-4707	Watershed management	3	0			Offered in Final Year Only
EE-4708	Marine pollution and Coastal management	3	0			Offered in Final Year Only
Inter Disciplinary						
IDE-x401	Workshop Technology	0	1	3	7	
IDE-x402	Engineering Materials	2	0			
IDE-x403	Engineering Thermodynamics	3	1			
IDE-x404	Basic Electronics	3	1			
IDE-x405	Instrumentation and control	2	1			
IDE-x406	Power distribution and utilization system	2	0			
IDE-x407	Heat and Mass Transfer	3	1			
IDE-x408	Thermal Power systems	3	1			
IDE-x409	Petroleum and Gas exploration	2	0			
IDE-x410	Petroleum Refinery Engineering	3	1			
Senior Design Project						
EE-4999	Final Year Design Project-I	0	3	1	6	Offered in Final Year Only
EE-4999	Final Year Design Project-II	0	3			Offered in Final Year Only

9.6 BS Environmental Science

The program of BS Environmental Science was launched in 2022 at Dawood University of Engineering & Technology. This is a 4-year BS degree program. BS Environmental Science courses teach knowledge pertaining to Natural Resource Management, Environmental Management System, Environmental Impact Assessment, Environmental Auditing, Occupational Hygiene, Health Safety & Environment, Solid Waste Management, Environmental Policy and Management, and Environmental Ethics. The Program is loaded with all basic facilities such as an excellent lecture hall, well equipped environmental laboratories, central library, and audiovisual facilities for the students. BS Environmental Science program is focused on arranging for future job roles in industry. It transforms students to work as Environmentalist, Solid waste Management, Health & Safety officer, Environmental Management Representative officer, and Environmental Inspector in various government and industrial sectors.

Course code	Knowledge area/ Name of Subject	Th	Lab	Required Courses	Required CH	Pre-requisites
Foundation						
ES-1101	Introduction to Environmental Science	3	0	10	30	
ES-1102	Introduction to Geology	2	1			
ES-2103	Environmental Physics	3	0			
ES-2104	Population and Environment	3	0			
ES-2105	Environmental Microbiology	2	1			
ES-2106	Environmental Chemistry	3	0			
ES-2107	Fundamentals of Ecology	3	0			
ES-2108	Climatology	3	0			
ES-3109	Analytical Techniques in Environmental Science	1	2			
ES-3110	Environmental Profile of Pakistan	3	0			
Major						
ES-2201	Environmental Economics	3	0	11	35	
ES-2202	Public Health and Environment	3	0			
ES-3203	Natural Resource Management	3	0			
ES-3204	Biodiversity and Conservation	3	0			
ES-3205	Water & Wastewater Pollution	3	1			
ES-3206	Environmental Management Systems	3	0			
ES-3207	GIS & Remote Sensing	2	1			
ES-3208	Environmental Governance	3	0			
ES-3209	Climate Change Adaptation & Mitigation	3	0			
ES-4210	Solid Waste Management	3	0			
ES-4211	Air and Noise Pollution	3	1			
Electives						
ES-4701	Water Resource Management	3	0	4	12	Offered in Final Year Only
ES-4702	Occupational Health and Safety	3	0			Offered in Final Year Only
ES-4703	Environmental Impact Assessment	3	0			Offered in Final Year Only
ES-4704	Marine Pollution & Coastal Management	3	0			Offered in Final Year Only
ES-4705	Energy and Environment	3	0			Offered in Final Year Only
ES-4706	Hydrology	3	0			Offered in Final Year Only
ES-4707	Disaster Risk Management	3	0			Offered in Final Year Only
ES-4708	Ecotourism	3	0			Offered in Final Year Only
ES-4709	Project Management	3	0			Offered in Final Year Only
ES-4710	Urban Environmental Management	3	0			Offered in Final Year Only
Senior Design Project						
ES-4999	Final Year Design Project-I	0	3	1	6	Offered in Final Year Only
ES-4999	Final Year Design Project-II	0	3			Offered in Final Year Only

9.7 MS Environmental Engineering

Program Educational Objectives (PEOs)

PEO1: Be competent in the professional practice of Environmental Engineering.

PEO2: Fulfill the needs of society on identifying and solving technical challenges in the field of Environmental Engineering using fundamental engineering principles with modern tools and practices in an ethical and socially responsible manner.

PEO3: Demonstrate an ability to function and communicate effectively as individuals or team members and show management and entrepreneurial potential. In addition, engage in lifelong learning to continually enhance their capabilities

Program Compulsory Courses

S. No.	Course Code	Courses Name	Credit Hours	Marks
1	EEE-7201	Physicochemical Processes	03	100
2	EEE-7202	Climate Change Adaptation and Mitigation	03	100
3	EEE-7301	Advanced Wastewater Treatment Methods	03	100
4	EEE-7302	Integrated Solid Waste Management	03	100
5	EEE-7203	Environmental Analytical Techniques	03	100
6	EEE-7204	Environmental Chemistry and Microbiology	03	100

Elective Courses

S. No.	Course Code	Courses Name	Credit Hours	Marks
1	EEE-7701	Environmental Impact Assessment	03	100
2	EEE-7702	Marine Pollution Monitoring and Control	03	100
3	EEE-7703	Environmental Health and Safety	03	100
4	EEE-7704	Environmental Biotechnology	03	100
5	EEE-7705	Renewable Energy Resource Engineering	03	100
6	EEE-7706	Air and Noise Pollution Control	03	100
7	EEE-7707	Green Engineering Technologies	03	100
8	EEE-7708	Ecology and Risk Assessment	03	100
9	EEE-7709	Water Resources Engineering	03	100
10	EEE-7710	Urban Water Supply and Sewer System Design	03	100
11	EEE-7711	Environmental Laws and Policies	03	100
12	EEE-7712	Research Methodology	03	100
13	EEE-7713	Environmental Modelling	03	100
14	EEE-7714	Membrane Technology for Water and Wastewater Treatment	03	100
15	EEE-7715	RS and GIS Application in the Environment	03	100

9.8 Ph.D. Environmental Engineering

Program Educational Objectives (PEOs)

PEO1: Be productive and contributing members of the environmental engineering profession as practitioners, entrepreneurs, researchers, or teachers.

PEO2: Be engaged in learning, understanding, and applying new ideas as the field develops.

PEO3: Promote the safety, health, and welfare of the public and environment through professional practice and civic leadership.

List of Courses

University Compulsory Courses

S. No.	Course Code	Courses Name	Credit Hours	Marks
1	EEE-8401	Advanced Mathematical Modeling and Simulation	03	100
2	EEE-8402	Advanced Research Methodology	03	100
3	EEE-8403	Probability and Stochastic Processes	03	100
4	EEE-8404	Management of Research and Research Ethics	03	100

Program Compulsory Courses

S. No.	Course Code	Courses Name	Credit Hours	Marks
1	EEE-7201	Physicochemical Processes	03	100
2	EEE-7202	Climate Change Adaptation and Mitigation	03	100
3	EEE-7301	Advanced Wastewater Treatment Methods	03	100
4	EEE-7302	Integrated Solid Waste Management	03	100

Elective Courses

S. No.	Course Code	Courses Name	Credit Hours	Marks
1	EEE-7701	Environmental Impact Assessment	03	100
2	EEE-7702	Marine Pollution Monitoring and Control	03	100
3	EEE-7703	Environmental Health and Safety	03	100
4	EEE-7704	Environmental Biotechnology	03	100
5	EEE-7705	Renewable Energy Resource Engineering	03	100
6	EEE-7706	Air and Noise Pollution Control	03	100
7	EEE-7707	Green Engineering Technologies	03	100
8	EEE-7708	Ecology and Risk Assessment	03	100
9	EEE-7709	Water Resources Engineering	03	100
10	EEE-7710	Urban Water Supply and Sewer System Design	03	100
11	EEE-7711	Environmental Laws and Policies	03	100

12	EEE-7714	Membrane Technology for Water and Wastewater Treatment	03	100
13	EEE-7715	RS and GIS Application in Environment	03	100
14	EEE-8701	Environmental Analytical Techniques	03	100
15	EEE-8702	Environmental Chemistry	03	100
16	EEE-8703	Environmental Risk Assessment and Management	03	100
17	EEE-8704	Watershed Management	03	100
18	EEE-8705	Applied Environmental Microbiology	03	100
19	EEE-8706	Principles and Applications of Bioremediation	03	100
20	EEE-8707	Contaminated Site Remediation	03	100
21	EEE-8708	Agriculture Pollution Control Engineering	03	100
22	EEE-8709	Special Topics in Environmental Engineering	03	100

DEPARTMENT OF PETROLEUM & GAS ENGINEERING

CHAPTER

10

10.1 About the Department

Petroleum and Gas Engineering has become an area of interest for the globe considering current energy needs of the industrialized society. The department has a highly qualified and experienced faculty. The ultimate goal of a petroleum engineer is to pursue all the techniques to achieve maximum sustainable recoveries from conventional and unconventional reservoirs. Achievement of such objectives requires extensive planning, designing and operation strategies of drilling, production and reservoir engineering. Hence, oil and gas industry require professional graduates capable of dealing with entire field challenges related to drilling, production and reservoir engineering. Therefore, present need is to train young minds on practical, theoretical and research horizons.

Petroleum and Gas Engineering department at Dawood UET, has made its task to provide industry with highly intellectual minds with strong theoretical background, practical exposure and possess research skills so that all the prevailing and upcoming challenges are solved as per the objectives. Department's course structure is based on course work, regular assignments, quizzes, practical experiments and regular field work/visits. The department also arranges field internships with the collaboration of various renowned oil and gas companies and provides the learning opportunity for conducting project/thesis work. The department is equipped with the state-of-art tech-supported classrooms powered with current-world teaching practices and effective learning tools based on cognitive and affective approach. The following laboratories are also available in the department which add-ons into skills-based psychomotor learning: Petro-physics lab, Geology lab, Reservoir simulation lab, Drilling simulation lab, Drilling mud lab and Hydrocarbon testing lab.

10.2 Mission

To establish state-of-the-art programs in petroleum and gas engineering emphasizing innovation, incorporation, collaboration, and high ethical standards to meet industrial requirements by producing research oriented and professionally skilled graduates capable to strengthen the country professional manpower.

10.3 Program Objectives

PEO-1.   To produce highly qualified graduates, who strengthens the manpower of the country and are capable to perform as professional Engineers.

PEO-2.   To develop graduates with technical depth and breadth to accomplish success in the Petroleum and Gas industry, and to enable them to be competitive in the Petroleum and Gas job market or in continuing their education.

PEO-3.   To help in developing research-oriented individuals to aspire advanced studies in specialized areas.

PEO-4.   To produce candid professional to discharge legal and ethical issues with responsibilities as it pertains to Petroleum and Gas Engineering.

10.4   Faculty Members

Prof. Dr. Engr. Rashid Mustafa Korai
Professor and Dean PMC
PhD (Chemical Engineering & Technology), BUCT, China
ME (Chemical Engineering), Mehran UET, Jamshoro
BE (Chemical Engineering), Mehran UET, Jamshoro
PEC No. CHEM/5903

Prof. Dr. Engr. Abdul Majeed Shar
Professor
PhD (Petroleum Engineering) University of Leeds, UK
MS (Petroleum Engineering), Herriot Watt University (Edinburgh), UK
BE (Petroleum & Natural Gas Engineering), Mehran UET, Jamshoro
PEC No. PETGAS/662

Dr. Engr. Bilal Shams
Associate Professor and Chairperson
PhD (Oil and Gas Field Development Engineering), China University of Petroleum (East China)
ME (Petroleum Engineering) Mehran UET, Jamshoro
B.E. (Petroleum & Natural Gas Engineering), Mehran UET, Jamshoro
PEC No. PETGAS/1243

Dr. Engr. Najeebullah Lashari
Associate Professor
PhD in Petroleum Engineering from University Teknologi PETRONAS, Malaysia
MS (Engineering Management), NED-UET, Karachi
B.E. (Petroleum & Natural Gas Engineering), Mehran UET, Jamshoro
PEC No. PETGAS/1443

Engr. Bharat Kumar Hirani
Assistant Professor
PhD (Chemical Engineering) Mehran UET, Jamshoro (In Progress)
M.Sc. (Energy & Environment), The University of Sheffield, UK
B.E. (Petroleum & Natural Gas Engineering), Mehran UET, Jamshoro.
PEC No. PETGAS/681

Dr. Engr. Darya Khan Bhutto
Assistant Professor
PhD (Petroleum Engineering), MUET, Jamshoro
MS (Oil-Gas Well Engineering), China University Of Petroleum (East China)
B.E (Petroleum & Natural Gas Engineering), Mehran UET, Jamshoro
PEC No. PETGAS/860

Engr. Najeeb Anjum Soomro
Assistant Professor
PhD (Petroleum Engineering) Mehran UET Jamshoro
ME (Petroleum Engineering), China University of Petroleum (East China)
BE (Petroleum & Natural Gas Engineering), Mehran UET, Jamshoro.
PEC No. PETGAS/843

Engr. Khalid Waheed Shaikh
Assistant Professor
PhD (Chemical Engineering), Dawood UET (In Progress)
M.E (Oil & Gas Field Development Engineering) Xian Shiyou University, China
B.E (Petroleum & Natural Gas) Mehran UET, Jamshoro
PEC No. PETGAS/826

Engr. Afroze Khatoon
Assistant Professor
PhD (Chemical Engineering) Dawood UET, Karachi (In Progress)
M.E (Petroleum Engineering), Mehran UET, Jamshoro
B.E (Petroleum & Natural Gas), Mehran UET, Jamshoro
PEC No. PETGAS/1865

Engr. Suresh Kumar Panjwani
Assistant Professor
PhD (Chemical Engineering) Dawood UET, Karachi (In Progress)
MSc. (Tech) (Environmental Engineering), University of Oulu, Finland
B.E (Petroleum & Natural Gas), Mehran UET, Jamshoro
PEC No. PETGAS/1607

Dr. Engr. Waheed Ali Abro
Assistant Professor
MS leading to PhD (Petroleum Engineering), Hanyang University Korea
B.E (Petroleum & Natural Gas), Mehran UET, Jamshoro
PEC No. PETGAS/1448

Engr. Waseem Ahmed Langah
Assistant Professor
PhD (Chemical Engineering) Dawood UET, Karachi (In Progress)
MS (Chemical Engineering-Specialization Energy Engineering) Dawood UET, Karachi
B.E. (Petroleum & Natural Gas Engineering) from Mehran University of Engineering & Technology, Jamshoro
PEC No. PETGAS/1695

Engr. Hassan Aziz
Assistant Professor
PhD (Petroleum Engineering) Mehran UET Jamshoro (In Progress)
M.E (Petroleum Engineering), Mehran UET Jamshoro
B.E (Petroleum & Natural Gas), Mehran UET Jamshoro
PEC No. PETGAS/1942

Dr. Engr. Zeeshan Lashari
Assistant Professor
PhD (Oil and Gas Field Development Engineering), China University of Petroleum (East China)
ME (Petroleum Engineering) Mehran UET Jamshoro
B.E. (Petroleum & Natural Gas Engineering), Mehran UET Jamshoro
PEC No. PETGAS/1228

Engr. Tariq Ali Chandio
Junior Lecturer
M.S leading to Ph. D (Petroleum Engineering), UTP, Malaysia (In Progress)
B.E. (Petroleum Engineering), UTP, Malaysia
PEC No. PETGAS/1918

Engr. Muhammad Murtaza
Junior Lecturer
PhD (Chemical Engineering), Dawood UET, Karachi (In Progress)
M.S (Chemical Engineering), Dawood UET, Karachi
B.E (Petroleum & Gas), Dawood UET, Karachi
PEC No. PETGAS/2858

Ms. Tahmina Fatima Siddiqui
Geologist
PhD (Geology), Sindh University, Jamshoro (In Progress)
MS (Geophysics), Bahria University, Karachi
MSc (Petroleum Technology), University of Karachi

10.5 BE Petroleum & Gas Engineering Course Catalogue

Course Code	Knowledge Area/Name of Subject	Theory	Lab	Req. Courses	Req. CH	Prerequisites
Engineering Foundation						
PG-1101	Fundamentals of Petroleum Engineering	3	0	7	17	
PG-1102	Introduction to Electrical Engineering	2	1			
PG-1103	Engineering Drawing	0	2			
PG-1104	Workshop Practice	0	2			
PG-2105	Mechanics of Materials	2	0			
PG-2106	Fluid Mechanics	2	1			
PG-2107	Unconventional Reservoirs	2	0			
Major Based Core Breadth						
PG-2201	Petrophysics	2	1	6	23	Petroleum Geology and Geophysical Exploration
PG-2202	Properties of Reservoir Fluids	3	1			Applied Thermodynamics
PG-2203	Drilling Engineering	3	1			Fundamentals of Petroleum Engineering
PG-3204	Reservoir Engineering	3	1			Properties of Reservoir Fluids
PG-3205	Well Logging	3	1			Properties of Reservoir Fluids
PG-3206	Petroleum Production Engineering	3	1			Properties of Reservoir Fluids
Major Based Core Depth						
PG-4301	Drilling Fluids and Hydraulics	3	1	8	29	Drilling Engineering / Offered in Final Year Only
PG-4302	Gas Reservoir Engineering	3	1			Reservoir Engineering / Offered in Final Year Only
PG-4303	Well Testing	3	1			Well Logging / Offered in Final Year Only
PG-4304	Well Completion and Integrity	3	1			Petroleum Production Engineering / Offered in Final Year Only
PG-4305	Reservoir Simulation	3	1			Reservoir Engineering / Offered in Final Year Only
PG-4306	Natural Gas Engineering	2	1			Properties of Reservoir Fluids / Offered in Final Year Only
PG-4307	Principles of Enhanced Oil Recovery	3	1			Reservoir Engineering / Offered in Final Year Only
PG-4308	Petroleum Economics	2	0			Reservoir Engineering / Offered in Final Year Only
Interdisciplinary Electives						
IDE-x401	Instrumentation and Process Control	2	1	7	15	Numerical Analysis and Software Applications
IDE-x402	Applied Thermodynamics	2	1			Applied Chemistry
IDE-x403	Petroleum Geology and Geophysical Exploration	3	0			Fundamentals of Petroleum Engineering
IDE-x404	Petroleum Refinery Engineering	3	1			Environment and Safety Management
IDE-x405	Reservoir Geomechanics	2	0			Petrophysics
IDE-x406	Mechanics of Materials	2	0			
IDE-x407	Applications of Data Sciences in Engineering	2	1			Computer Fundamentals and Programming
Project						
PGE-4999	Final Year Design Project-I	0	3	1	6	
PGE-4999	Final Year Design Project-II	0	3			

DEPARTMENT OF METALLURGY & MATERIALS ENGINEERING

CHAPTER

11

mme.duet.edu.pk

11.1   About the Department

The department was established in 1964 with the aim of producing professional and qualified engineers in the field of metallurgical engineering. Later on due to an increasing the demand of using new emerging materials such as superconductor's, Nano materials and ultra lightweight material, new magnetic materials and developments of high-temperature super alloys. The department is now offering four years combined bachelor degree program in the field of Metallurgy and Materials Engineering. Being the first department of the country, it fulfilled the needs of qualified man power for many metal industries including the iron and steel industry like Pakistan Steel Mill, People Steel Mills, Karachi Shipyard and Engineering Works, Pakistan Machine Tool Factory, Bolan Casting, Automobile and Aerospace industries. Many public and private organizations are engaged in re-melting, refining, forming, and fabrication operations of metals, nonmetals as well as the many Research and Development Organizations in country are also using and conducting research work on engineering materials which also needs qualified man powder.

The course consists of various major subjects such as Materials Thermodynamics, Iron Making, Steel Makin, Physical Metallurgy, Advanced Materials and Nanotechnology, Materials Characterization, Inspection & Testing of Materials, Heat treatment Processes, Corrosion Prevention and Protection, Manufacturing Technology, Fracture Mechanics and failure analysis which form the base for B.E, degree program. The Department is equipped with labs and equipment's such as Advanced Characterization lab, Foundry Engineering lab, Materials testing lab, Spectroscopy lab, Corrosion Lab, Metallography lab and Computer lab. The department has full time qualified foreign PhD faculty. The department is privileged to have visiting faculty from all the local industries. With the advent of new materials, the department is also catering the teaching and training to our students in various metals nonmetals related industrial sectors concerned with iron and steels, ceramic polymers, and composite materials. Our final year students carry out internship training and research projects in these diversified fields of materials and indigenous resources at the local industries and research laboratories. The department also offering career counselling and makes efforts in the placement of our graduates in the industry and government departments. With the current support of HEC/Ministry of Education, Government of Sindh, the existing laboratories are being equipped and new labs are being established with new equipment's for testing and evaluation of all the engineering materials.

The Department of Metallurgy and Materials Engineering offers extensive coursework in its both postgraduate programs (MS/ Ph.D.). Department is also offering full-time Masters' by coursework/ research work and Ph.D. programs by research work in engineering. It has continuously updated the contents of courses to ensure relevancy to the needs of government organizations and industry.

11.2 Mission

To provide quality education, research, and training in the field of metallurgy and materials engineering. Our aim is to produce graduates who are capable of applying their knowledge and skills to solve real-world problems related to materials processing, characterization, and performance.

11.3 Program Educational Objectives (BE Metallurgy & Materials Engineering)

PEO–1: Graduates will be capable to excel in metallurgy and materials engineering sectors with advanced skills to solve complex engineering problems in production and development of high-quality materials for modern applications.

PEO–2: Graduates will be proficient as individuals or team members, having effective management techniques and entrepreneurial abilities to act as ethical and responsible professionals.

PEO–3: Graduate will be capable to solve the technical, economical, and environmental issues lies in the industry of metallurgy and materials applying professional development for society.

11.4 Faculty Members

Dr. Inamullah Maitlo
Chairperson/ Associate Professor
HEC PhD Approved Supervisor
PhD (Biomaterials) BUCT, China
ME (Materials Sci: & Tech:), MUET, Jamshoro
BE (Metallurgy & Materials) MUET, Jamshoro
PEC No. Metal/2602

Dr.Syed Asif Ali Shah
HEC PhD Approved Supervisor
Metal/1884
Professor/Registrar
PhD (Nanomaterials) DUT, China
M.E (Materials Engineering)
NEDUET
B.E (Metallurgy &Materials) MUET

Engr. Dr. Sajid Hussain Siyal
Associate Professor
HEC PhD Approved Supervisor
PhD (Materials Science & Engineering) BUCT, China
ME (Materials Engineering), NEDUET, Karachi
BE (Metallurgy & Materials), MUET, Jamshoro
PEC No. Metal/02161

Engr. Subhan Ali Jogi
Assistant Professor
ME (Metallurgy and Materials) MUET, Jamshoro
BE (Metallurgy and Materials) MUET, Jamshoro
PEC No. Metal/1923

Engr. Tufail Ahmed
Assistant Professor
ME (Metallurgical) NEDUET, Karachi
BE (Metallurgical) MUET, Jamshoro
PEC No. Metal/2776

Engr. Saddam Ali
Assistant Professor
ME (Metallurgy and Materials) DUET, Karachi
BE (Metallurgy and Materials) DUET, Karachi
PEC No. Metal/ 3674

Engr. Abdul Qadir
Assistant Professor
ME (Metallurgy & Materials), MUET, Jamshoro
BE (Metallurgy & Materials), MUET, jamshoro
PEC No. Metal/03672

Dr. Safdar Ali Larik
Assistant Professor
PhD (Materials Science & Engineering) BUCT China
ME (Textile), MUET, Jamshoro
BE (Textile), MUET, Jamshoro
PEC No. Textile/376

Engr. Aqsa Shaikh
Lecturer
ME (Metallurgy & Materials), MUET, Jamshoro
BE (Metallurgy & Materials), MUET, Jamshoro
PEC No. Metal/05023

Engr. Muhammad Fahad Riaz
Assistant Professor (On Study Leave)
ME (Materials) NEDUET, Karachi
BE (Materials) NEDUET, Karachi
PEC No. Metal/2639

Engr. Shakir Hussain
Assistant Professor (On Study Leave)
ME (Metallurgy & Materials) MUET, Jamshoro
BE (Metallurgy & Materials) MUET, Jamshoro
PEC No. Metal/2597

Engr. Zubair Ahmed
Assistant Professor (on Study Leave)
ME (Metallurgy & Materials) MUET, Jamshoro
BE (Metallurgy & Materials) MUET, Jamshoro
PEC No. Metal/3178

Engr. Syed Ali Afzal
Assistant Professor
(On Study Leave)
ME (Materials) NEDUET, Karachi BE (Materials) NEDUET, Karachi PEC No. Metal/04039

Engr. Vinod Kumar
Lecturer
(On Study Leave)
ME (Metallurgy & Materials), MUET, Jamshoro
BE (Metallurgy & Materials), MUET, Jamshoro
PEC No. Metal/4144

11.6 MS Metallurgy & Materials Engineering

I.   Program Objectives

PEO–1: Engineering Concepts: Graduates will apply their knowledge to research, analysis, and design and would be involved in continue professional development as individual and team members.

PEO–2: Research and Innovation: Graduated students will be able to utilize their knowledge and skills to solve the challenging problems in industry and academic.

PEO–3: Professional Practice and Ethics: Graduates will act as ethical and responsible professionals providing solutions due considerations to economic, environmental and safety impacts of their work on society.

II.   Core Courses

S. No.	Course Code	Course Name	Credit Hours
1	MME-621	Heat treatment and Phase Transformations	03
2	MME-622	Materials thermodynamics and Extractive Metallurgy	03
3	MME-631	Mechanical Behaviour of Materials and failure analysis	03
4	MME-632	Advanced Materials	03

III.   Compulsory Courses in Lieu of Thesis

S. No.	Course Code	Course Name	Credit Hours
1	MME-7701	Advanced Engineering Ceramics & Glasses	03
2	MME-7702	Advanced Steel	03

III.   Elective Courses

S. No.	Course Code	Course Name	Credit Hours
1	MME-6701	Corrosion Protection and Prevention	03
2	MME-6702	Polymer Science and Engineering	03
3	MME-6703	Advanced Composite Materials	03
4	MME-6704	Thermomechanical Processing	03
5	MME-6705	Manufacturing Processes & Production Management	03
6	MME-6706	Nano Materials and Nanotechnology	03
7	MME-6707	Advanced Characterization Techniques	03
8	MME-6708	Welding and Joining Processes	03
9	MME-6709	Computational Methods for Engineers	03
10	MME-6710	Research Methodology	03
11	MME-6711	Production Management and Quality Assurances	03
12	MME-6712	Surface Engineering	03

11.7 PhD Metallurgy & Materials Engineering

I. Program Objectives

PEO-1, Engineering Concepts: To utilize hypothetical ideas, mathematical and engineering principles to address the technological challenges of their respective field for innovation.

PEO-2, Research and Innovation: To develop the research culture that will invoke efficient ideas, and their transformation to the scientific innovation for academia and industry in novel ways.

PEO-3, Professional Practice & Ethics: To prepare the student to work in a multi-disciplinary environment, provide leadership in their area, practice moral and ethical values, and upholding the academic integrity that can impact the society.

II. Program Compulsory Courses

S. No.	Course Code	Course Name	Credit Hours
1	MME-8201	Physics and Chemistry of Materials	03
2	MME-8202	Non-Ferrous Alloy Design	03
3	MME-8203	Thermodynamics and Statistical Mechanics of Materials	03
4	MME-8204	Synthesis and Design of Materials	03

III. Elective Courses

S. No.	Course Code	Course Name	Credit Hours
1	MME-8701	Corrosion and Its Control	03
2	MME-8702	Science and Technology of Polymers	03
3	MME-8703	Nanomaterial Engineering	03
4	MME-8704	Advanced Composites Materials	03
5	MME-8705	Kinetics of Phase Transformations	03
6	MME-8706	Production of Ferrous and Non-Ferrous Materials	03
7	MME-8707	Biomaterials and Biocompatibility	03
8	MME-8708	Carbon Based Materials	03
9	MME-8709	Electrochemical Methods and Materials	03
10	MME-8710	Advanced Photovoltaic and Solar Energy Physics	03
11	MME-8711	Surface Science and Catalysis	03
12	MME-8712	Hydrogen Based Energy Systems and Fuel Cells	03
13	MME-8713	Experimental Techniques in Materials Characterization	03
14	MME-8714	Surface Engineering and Coating Techniques	03
15	MME-8715	Electronic and Magnetic Materials	03
16	MME-8716	Principles and Practice of Transmission Electron Microscopy	03
17	MME-8717	Computational Materials Engineering	03
18	MME-8718	Production Management and Quality Assurance	03
19	MME-8719	Theory of the Solid State	03
20	MME-8720	Modern Aspects of Materials Science	03

11.8 BS Materials Science

Course Code	Knowledge Area/Name of Subject	Theory	Lab	Req. Courses	Req. CH	Prerequisites
Foundation						
MTS-1101	Fundamentals of Materials Science	2	0	10	30	
MTS-1102	Computer Aided Drawing	2	1			
MTS-1103	Smart and Functional Materials	3	0			
MTS-2101	Materials Thermodynamics	3	0			
MTS-2102	Physical Metallurgy	3	1			Fundamental of Materials Science
MTS-2103	Mechanics of Materials	2	0			
MTS-2104	Materials Testing Techniques	3	1			
MTS-2105	Ceramics & Refractory Materials	3	1			
MTS-2106	Polymer Science	2	1			
MTS-2107	Health Safety & Environment	2	0			
Major						
MTS-3201	Materials for Sustainable Infrastructure	3	0	10	30	Fundamental of Materials Science
MTS-3202	Electromagnetic Materials	3	0			Fundamental of Materials Science
MTS-3203	Composite Materials	2	1			Materials Thermodynamics
MTS-3204	Mineral Sciences	3	0			
MTS-3205	Surface Science	3	0			Fundamental of Materials Science
MTS-3206	Crystal Structure & Analysis	3	0			
MTS-3207	Biomaterials	3	0			Fundamental of Materials Science
MTS-4301	Heat Treatment of Materials	3	1			Applied Chemistry
MTS-4302	Materials Characterization Techniques	3	0			Physical Metallurgy
MTS-4303	Extraction of Materials	2	0			
Electives						
MTS-4304	Joining Processes of Materials	2	1	4	12	Offered in Final Year Only
MTS-4305	Corrosion & protection of Materials	3	0			Offered in Final Year Only
MTS-4306	Advanced Materials and Nanotechnology	3	0			Offered in Final Year Only
MTS-4307	Failure Analysis of Materials	2	1			Offered in Final Year Only
MTS-4308	Materials Fabrication	3	0			Offered in Final Year Only
MTS-4309	Materials for Aerospace Applications	3	0			Offered in Final Year Only
MTS-4310	Materials for Renewable Energy	3	0			Offered in Final Year Only
MTS-4311	Nuclear Materials	3	0			Offered in Final Year Only
Interdisciplinary						
IDE-x401	Circuits & Electronics	2	1	4	12	
IDE-x402	Instrumentation & Control	3	1			
IDE-x403	Research Methodology	3	0			
IDE-x403	Project Planning & Management	1	1			
FYDP						
MTS-4999	Final Year Design Project-I	0	3	1	6	Offered in Final Year Only
MTS-4999	Final Year Design Project-II	0	3			Only Offered in Final Year

DEPARTMENT OF CHEMICAL ENGINEERING

CHAPTER

12

che.duet.edu.pk

12.1   About the Department

The department of Chemical Engineering, established in 1964, is the oldest department in the field of Chemical Engineering in Sindh. It has produced many outstanding graduates over the years. The department has a highly qualified and experienced PhD faculty. Currently there are 23 faculty members serving in the Chemical Engineering Department. Department faculty has marked research profile in their research fields. The department has developed 8 laboratories equipped laboratories for undergraduate and graduate students. All classrooms are also fully equipped with accessories necessary for modern learning. Chemical Engineering Department has started MS and PhD program at evening time since 2018. This initiative has brought big change in promoting research culture and academia industry linkage.

Department offers the following degree programs:

BE   (Chemical Engineering)
MS   (Chemical Engineering)
PhD   (Chemical Engineering)

12.2 Mission

To provide students with quality engineering education by emphasizing fundamental understanding of physical chemical and biological processes, engineering design and synthesis, leadership, ethics and interdisciplinary perspectives on technology, economics, and social issues, to carry out basic and applied research and to provide services to the wider community.

12.3   Program Educational Objectives (BE Chemical Engineering)

PEO-1:   Possess engineering knowledge; problem solving and investigating skills bring out sustainable and environmental solutions as well as emerging technologies for chemical industry growth and development. .

PEO-2:   apply and practice principles of chemical engineering, scientific techniques and modern computational tools to solve engineering and industrial problems during professional career.

PEO-3:   Possess managerial knowledge, self-learning and skills, play their role individually as team members and effectively communicate as leaders to provide solutions for industry and society, while respecting all norms of professional ethics.

12.4 Faculty Members

Prof. Dr. Abdul Waheed Bhutto
Professor / Pro Vice Chancellor
HEC approved PhD Supervisor
PhD (Chemical Engineering), MUET
M. E (Environmental Engineering),
NED University, Karachi
B.E (Chemical Engineering) DCET,
Karachi
PEC No. CHEM/3629

Dr. Syed Abdul Karim Shah
Associate Professor / Chairperson
HEC approved PhD Supervisor
PhD (Chemical Engineering),
Hanyang University, South Korea
ME (Chemical Engineering), MUET,
Jamshoro
BE (Chemical Engineering), MUET,
Jamshoro
PEC No. CHEM/7499

Engr. Sadia Karim
Assistant Professor
PhD (In Progress) (Chemical
Engineering), DUET, Karachi
M.E (Energy Engineering), Hamdard
University, Karachi
B.E (Chemical Engineering), DCET,
Karachi
PEC No. CHEM/3632

Engr. Muhammad Azam Usto
Assistant Professor
PhD (in Progress) Chemical
Engineering,
MUET M.E (Energy Engineering),
Hamdard University, Karachi
B.E (Chemical Engineering),
MUET, Jamshoro
PEC No. CHEM/6312

Engr. Syed Mazhar Imam
Assistant Professor
PhD (In Progress) (Chemical
Engineering), DUET, Karachi
M.E (Energy Engineering), Hamdard
University, Karachi
B.E (Chemical Engineering), MUET,
Jamshoro
PEC No. CHEM/6027

Dr. Abdul Sattar Jatoi
Assistant Professor
PhD (Chemical Engineering), MUET,
Jamshoro
M.E (Chemical Engineering), MUET,
Jamshoro
B.E (Chemical Engineering), MUET,
Jamshoro PEC
No. CHEM/11381

Engr. Abdul Qayoom Memon
(on PhD study leave)
Assistant Professor
PhD (In Progress) University of
Malaya, Malaysia M.E (Chemical
Engineering), MUET, Jamshoro
B.E (Chemical Engineering), MUET,
Jamshoro PEC No. CHEM/8450

Engr. Zubair Hashmi
(on PhD study leave)
Assistant Professor
PhD (In Progress), (Chemical
Engineering), Universiti Brunei
Darussalam, Brunei Darussalam
M.E (Chemical Engineering),
NEDUET, Karachi
B.E (Chemical Engineering),
NEDUET, Karachi
PEC No. CHEM/10864

Engr. Muhammad Tanzeel Usman
Assistant Professor
MSc (Chemical Engineering), Otto Von
Guericke University, Germany
B.E (Chemical Engineering), DCET,
Karachi
PEC No. CHEM/10537

Engr. Muhammad Hassam Wajahat
Assistant Professor
MSc (Petroleum Engineering), Delft
UET, The Netherlands
B.E (Chemical Engineering), NUST,
Islamabad
PEC No. CHEM/12975

Engr. Dr. Shoaib Ahmed
Assistant Professor
PhD (EE) Curtin University, Malaysia
ME (EE), USPCASW, MUET, Jamshoro
B.E (Chemical Engineering), MUET, Jamshoro
PEC No. CHEM/12060

Dr. Arshad Iqbal
Lecturer
PhD Chemical Engineering), MUET, Jamshoro
M.E (Chemical Engineering), MUET, Jamshoro B.E (Chemical Engineering), MUET, Jamshoro PEC No. CHEM/9910

Engr. Azka Rizwana Siddiqui
(on PhD study leave)
Lecturer
PhD (In Progress) Chalmers University of Technology Sweden
ME (Chemical Engineering), Beijing University of Chemical Technology, China
B.E (Chemical Engineering), DUET, Karachi
PEC No. CHEM/13491

Engr. Abdul Basit Qazi
Lecturer
PhD (In Progress) (Chemical Engineering). Mehran UEI Jamsharoo
M.S (Chemical Engineering), Beijing University of Chemical Technology, China.
B.E (Chemical Engineering), MUET, Jamshoro
PEC No. CHEM/1116

Engr. Shahrukh Memon
Lecturer
PhD (In Progress) (Chemical Engineering) DUET, Karachi
M.S (Chemical Engineering), DUET, Karachi
B.E (Chemical Engineering), DUET, Karachi
PEC No. CHEM/13161

Engr. Atta Muhammad
Junior Lecturer (On Study Leave)
PhD (In Progress) University of Milano Bicocca Italy
M.S (Chemical Engineering), DUET
B.E (Chemical Engineering), UET, Lahore
PEC No. CHEM/15748

12.5   BE Chemical Engineering Course Catalogue

Course Code	Knowledge Area/Name of Subject	Theory	Lab	Req. Courses	Req. CH	Prerequisites
Foundation						
CH-1101	Chemical Process Calculations-I	3	0	8	29	
CH-1102	Chemical Process Technology	3	1			
CH-1103	Engineering Thermodynamics	3	1			
CH-2104	Particulate Technology	3	1			
CH-	Fluid Mechanics-I	3	0			
CH-	Heat Transfer	3	1			
CH-	Mass Transfer	3	1			
CH-	Chemical Process Calculations-II	3	0			
Major Based Core Breadth						
CH-3201	Fuels & Energy	3	1	9	31	
CH-3202	Chemical Engineering Thermodynamics	3	0			Engineering Thermodynamics
CH-3303	Transport Phenomena	3	0			Fluid Mechanics-I
CH-3304	Chemical Reaction Engineering	3	1			Chemical Process Calculations-I
CH-3305	Fluid Mechanics-II	2	1			Fluid Mechanics-I
CH-3306	Simultaneous Heat and Mass Transfer	3	1			Heat Transfer
CH-3307	Chemical Engineering Equipment Design	3	0			Chemical Process Calculations-I
CH-3308	Chemical Engineering Process Design	3	0			Chemical Process Calculations-I
CH-4309	Instrumentation and Process Control	3	1			Complex Variable and Transforms
Major Based Core Depth						
CH-4701	Environmental Engineering	3	0	3	9	Offered in Final Year Only
CH-4702	Polymer Engineering	3	0			Offered in Final Year Only
CH-4703	Novel Separation Processes	3	0			Offered in Final Year Only
CH-4704	Textile Engineering	3	0			Offered in Final Year Only
CH-4705	Food Engineering	3	0			Offered in Final Year Only
CH-4706	Computational Fluid Dynamics	3	0			Offered in Final Year Only
CH-4707	Bio-Chemical Engineering	3	0			Offered in Final Year Only
CH-4708	Green Technologies	3	0			Offered in Final Year Only
CH-4709	Nuclear Engineering	3	0			Offered in Final Year Only
CH-4710	Petroleum Refinery Engineering	3	0			Offered in Final Year Only
CH-4711	Waste Management	3	0			Offered in Final Year Only
Inter Disciplinary Elective						
IDE-x401	Applied Electrical Engineering	2	0	7	12	
IDE-x402	Engineering Materials	2	0			
IDE-x403	Engineering Mechanics	2	0			
IDE-x404	Maintenance & Utility Engineering	2	0			
IDE-x405	Process Safety Management	2	0			
IDE-x406	Engineering Drawing	0	1			
IDE-x407	Workshop Practices	0	1			
IDE-x408	Maintenance Engineering and Safety	2	0			
CH-4999	Final Year Design Project-I	0	3	1	6	Offered in Final Year Only
CH-4999	Final Year Design Project-II	0	3			Offered in Final Year Only

12.6 MS Chemical Engineering

I.   Program Educational Objectives

PEO-1,   Advanced Chemical Engineering Knowledge: Exhibit the knowledge of Chemical Engineering in modern work environment of process industries, advanced research studies and interdisciplinary fields.

PEO-2,   Research Skill Development: Achieve the technical, professional, and managerial skills for long-life learning by integrating the attained knowledge with the real-time world.

PEO-3,   Sustainable Development Goals: Involve in process industries or research studies or interdisciplinary fields contributing towards sustainable goals.

PEO-4,   Communication: Effectivity comprehend orally/writing on chemical engineering and its associated discipline which leads to the solution of identified problems and issues.

II.   Core Courses

S. No.	Course Code	Course Name	Credit Hours
1	CH-6301	Advanced Chemical Engineering Thermodynamics	03
2	CH-6302	Advanced Chemical Reaction Engineering and Catalysis	03
3	CH-6303	Advanced Transport Phenomena	03
4	CH-6304	Advanced Engineering Mathematics	03

III.   Compulsory Courses in Lieu of Thesis Work

S. No.	Course Code	Course Name	Credit Hours
1	CH-7401	Experimental Design and Analysis	03
2	CH-7402	Management of Research & Development	03

IV.   Elective Courses (Design Engineering)

S. No.	Course Code	Course Name	Credit Hours
1	CH-7702	Advanced Chemical Reactor Design	03
2	CH-7703	Advanced Fluid Mechanics	03
3	CH-7704	Advanced Heat Transfer	03
4	CH-7705	Numerical Methods in Chemical Engineering	03
5	CH-7706	Design of Heat Recovery Systems	03
6	CH-7707	Particle Dynamics	03

V.   Elective Courses (Process Engineering)

S. No.	Course Code	Course Name	Credit Hours
1	CH-7709	Biochemical Engineering	03
2	CH-7708	Computational Fluid Dynamics	03
3	CH-7710	Computer Aided Process Design	03
4	CH-7711	Occupational Health and Safety in Process Industries	03
5	CH-7712	Process Design and Optimization	03
6	CH-7713	Transport Processes	03
7	CH-7714	Process Modeling and Control	03
8	CH-7715	Process Safety and Loss Prevention	03
9	CH-7701	Advanced Separation Processes	03

VI.   Elective Courses (Energy Engineering)

S. No.	Course Code	Course Name	Credit Hours
1	CH-7716	Sustainable Energy Engineering	03
2	CH-7717	Environmental Engineering	03
3	CH-7718	Energy Management & Auditing	03
4	CH-7719	Power Plant Engineering	03
5	CH-7720	Coal Technology, Carbon Capture and Sequestration	03

VII.   Elective Courses (Materials Engineering)

S. No.	Course Code	Course Name	Credit Hours
1	CH-7721	Advanced Composite Materials	03
2	CH-7722	Nanotechnology	03
3	CH-7723	Advanced Materials Engineering	03
4	CH-7724	Mechanical Behavior of Materials	03
5	CH-7725	Manufacturing and Processes	03

12.7   PhD Chemical Engineering

I.   Program Educational Objectives

PEO-1,   Research Skill Development: Achieve and implement broad foundational knowledge of chemical engineering and its sub-discipline to contribute to contemporary issues related to the specialized area.

PEO-2,   Leadership and Management: Achieve professional development by effective communication and recognizing leadership and executive responsibilities in interdisciplinary fields.

PEO-3, **Sustainable Development Goals:** Present innovative research approaches for complex chemical engineering problems and contribute towards sustainable development goals.

PEO-4, **Communication:** An ability to communicate scientific concepts, methods, results, and conclusions effectively to experts and non-experts, including the society at large, in oral and written form.

III. Elective Courses*

S. No.	Course Code	Course Name	Credit Hours
1	CH-8701	Thesis and Manuscript Writing Skills	03
2	CH-8702	Research Seminars	03
3	CH-7701	Advanced Separation Processes	03
4	CH-8703	Advanced Computational Fluid Dynamics	03
5	CH-8704	Advanced Process Dynamics & Control	03
6	CH-8705	Chemical Kinetics and Transport	03
7	CH-8706	Advanced Fluid Mechanics and Heat Transfer	03
8	CH-8707	Advanced Principles of Biomolecular Engineering	03
9	CH-8708	Advance Nano technology	03
10	CH-7709	Computational Fluid Dynamics	03
11	CH-7710	Computer Aided Process Design	03
12	CH-7711	Occupational Health and Safety in Process Industries	03
13	CH-7712	Process Design and Optimization	03
14	CH-7713	Advanced Transport Processes	03
15	CH-7714	Process Modelling & Control	03
16	CH-7715	Process Safety and Loss Prevention	03
17	CH-7716	Sustainable Energy Engineering	03
18	CH-7718	Energy Management & Auditing	03
19	CH-7719	Power Plant Engineering	03
20	CH-7720	Coal Technology, Carbon Capture, and Sequestration	03
21		Design of Heat Recovery Systems	03
22	CH-7721	Advanced Composite Materials	03
23	CH-7722	Nano Technology	03

S. No.	Course Code	Course Name	Credit Hours
24		Advance Materials Engineering	03
25	CH-7723	Mechanical Behavior of Materials	03
26	CH-7724	Membrane Technology	03
27	CH-7725	Green Process Engineering	03
28	CH-7726	Gasification Processes	03
29	CH-7727	Analytical Techniques in Chemical Engineering	03
30	CH-7728	Materials Technology	03
31	CH-7729	Advanced Fuel Technology	03
32	CH-7730	Materials for Biomedical Applications	03
33	CH-7731	Polymer Engineering	03
34	CH-7732	Corrosion and Protection	03
35	CH-7733	Computational Fluid Dynamics	03
36	CH-7734	Chemical Kinetics and Reactor Design	03
37	CH-7735	Wastewater Treatment Technologies	03
38	CH-7736	Catalysis, Bio-catalysis, and Kinetics	03
39	CH-7737	Food Engineering	03
40	CH-7738	Engineering Procurement and Supply Chain	03
41	CH-7739	Engineering Economics and Project Management	03
42	CH-7740	*Elective Chemical Engineering Graduate Course	03
43	CH-7741	(Advanced level course(s)) approved by BoS	03

DEPARTMENT OF BASIC SCIENCES & HUMANITIES

CHAPTER

13

13.1 About the Department

Department of Basic Sciences and Humanities is working for Chemists, Physicist, and English Linguists to make them learn how they can change raw materials into economically viable products. By solving technological problems and create innovations that impact our lives in surprising ways. The department's research strategy aims to the national drive for 'sustainability' addressing the need for mathematics, chemical science and materials. Our vision is to produce academic, industrial, managerial and entrepreneurial leaders of tomorrow, and to equip them with the technical and intellectual skills required to tackle key national issues such as energy, healthcare, the environment, and economy.

Humanities cover Pakistan Studies, Islamic Studies, Civics/Ethics and other related studies. The purpose of teaching these subjects in a university is to inculcate into the rising generation a sense of duty and loyalty to their country Pakistan and religion Islam. Pakistan studies and Islamic studies are taught to make students true and patriotic Pakistanis and practical Muslims. Islamic studies will make them a good human being that will not only be successful in this finite world, but also hereafter. Pakistan study will produce patriotic and true Pakistanis to justify the maxim as the land of pure people.

The curriculum in education is a planned sequence of instruction or course of study of an academic program which students must follow. Higher education in the field of chemistry provides knowledge and gives guidelines to resolve many challenges encountering in daily life e.g. medicinal, industrial, and environmental problems etc. The purpose to start Bachelor of Science (BS) in Chemistry program is to augment the knowledge and to meet its current and future needs of country. There is a wider scope of BS Chemistry in Pakistan with none doubt. There is undoubtedly an enormous scope and career within the field of chemistry. Courses offered at the department have the benefit of a flexible curricular program capable of preparing them for advance studies in Chemistry as well as careers in teaching and research institutes. The faculty and staff in our department provide an exceptional environment where students can explore, discover, and learn science through coursework and research. The program requires students to take a broad spectrum of chemistry and develop applications in diverse applied areas with ubiquitous importance in education and education-based fields.

The program of Chemistry, offers research intensive programs leading to Master of Science/Philosophy (MS/MPhil) degree in Industrial Chemistry, giving talented and motivated students the chance to make discoveries in chemical science and related disciplines. Our program is designed to provide students with a broad background in chemistry while simultaneously offering opportunities to do multidisciplinary research. Research opportunities are available in a wide-range of contemporary areas of chemistry, including organic, inorganic, physical, analytical, polymer, environmental and nano-materials chemistry. We pride ourselves on our highly interactive, diverse, and collegial scientific environment. Our emphasis on collaboration connects us to colleagues around campus, across the country, and throughout the world.

Post-graduation research will help in development of R&D centers in every industrial sector to resolve industrial technical problems and will improve products' quality and industry economy. The post-graduation program will equip the post-graduates with advanced research skills, they will play key roles in academia and industry for development of country's economy and foreign collaboration.

13.2 Mission

To make use of scientific and academic research to produce graduates well-versed in problem solving and critical thinking skills.

Program Educational Objectives (PEOs

PEO-1: To acquire a strong foundation in chemical principles and analytical skills for environmental and industrial sustainability.

PEO-2: To gain proficiency in laboratory techniques, instrumentation, and safety to conduct and analyze chemical experiments effectively.

PEO-3: To cultivate leadership, teamwork, and ethical responsibility to contribute effectively to professional careers and society.

Department of Basic Sciences and Humanities

Dr. Tasneem Zehra
Chairperson/ Associate Professor
PhD (Organic Chemistry),
University of Brunei,
Darussalam, Brunei

Dr. Ghulam Abbas Kandhro
Professor
(HEC Approved Supervisor)
Post Doc(Microextraction,
Spectroscopic methods, Method
development),
Erciyes University, Kayseri, Turkey
PhD (Analytical Chemistry),
University of Sindh, Jamshoro

Dr. Shahab Alam
Associate Professor
PhD (Organic Chemistry),
HEJ, Karachi University, Karachi

Dr. Darakshan Ara
Assistant Professor
PhD (Chemistry),
FUUAST, Karachi
MSc (Physical Chemistry),
University of Karachi

Dr. Pervaiz Ali Chanar
Assistant Professor
PhD (Organic Chemistry),
Quaid-e-Azam University, Islamabad

Dr. Muhammad Ilyas Abro
Assistant Professor
PhD (Atmospheric Physics),
Nanjing University of Information
Science & Technology, Nanjing,
China

Dr. Syed Nizamuddin Shah Bukhari
Assistant Professor
PhD (On Study Leave), Materials
Science, BUCT, Beijing, China
MPhil (Atomic Physics)
Q.A.U., Islamabad

Mr. Muhammad Ashraf
Assistant Professor
PhD (In Progress)
Sindh University, Jamshoro
M.Phil (Laser Plasma Spectroscopy)
University of Sindh, Jamshoro

Mr. Sikander Ali Larik
Junior Lecturer
PhD (Material Science)
(In-Progress), DUET, Karachi
MS (Material Science)
BUCT University, China

Mr. Rafiq Rahman
Lecturer
MA (English Literature)
S.A.L.U, Khairpur
BA (English)
S.A.L.U, Khairpur

Mrs. Ayesha Amer
Assistant Professor
M.Phil (English Language &
Literature),
Air University, Islamabad
MA (English Language & Literature),
B.Z.U., Multan

Mrs. Suneeta Kumari
Lecturer
M.Phil. (English), Iqra University,
Karachi
MA (English Literature), S.A.L.U,
Khairpur
MA (English Linguistics), S.A.L.U,
Khairpur

Mr. Muhammad Farshad
Assistant Professor
Ph.D (In Progress), Central China
Normal University, Wuhan, China
M.Phil (English Language &
Literature)
Dalian University of Technology,
China
MA (English Language & Literature),
University of Sindh, Jamshoro

Ms. Irum Pervaiz
Assistant Professor (on study leave)
PhD English (In-Progress), Univeristi
Sains Malaysia, Penang, Malaysia
M.Phil (English Language &
Literature), MUET, Jamshoro

Mr. Mushtaque Ahmed Solangi
Assistant Professor
M.Phil. Language Policies,
Language Pedagogy),
NED University, Karachi
MA (English Linguistics), University
of Sindh, Jamshoro

Mr. Muhammad Hassan Abbasi
Lecturer
PhD (In-Progress)
Institute of English Language &
Literature University of Sindh
MS (Applied Linguistics)
NEDUET
MA (English Linguistics) University
of Karachi

Mr. Naveed Uz Zaffar
Lecturer
PhD (In Progress), (Islamic Studies),
University of Karachi
MA (Islamic Studies), University of
Karachi

Mrs. Mahvish Asif Shaikh
Junior Lecturer
M.Phil (In Progress), (Islamic
Studies), S.A.L.U, Khairpur
MA (Islamic Studies)
S.A.L.U, Khairpur

Mrs. Mehwish Parveen
Lecturer
M.Phil (In progress)
University of Karachi
MA (Pakistan Studies)
University of Karachi

Mr. Faisal
Junior Lecturer
Ph.D. (Pakistan Studies) (In Progress) University of Karachi, Karachi
M.Phil. (Pakistan Studies), University of Sindh
MA (Pakistan Studies), University of Karachi

Ms. Zunera Memon
Junior Lecturer
M.Phil. (Pakistan Studies), University of Karachi, Karachi.
MA (Pakistan Studies)
University of Sindh

13.4 BS Chemistry Course Catalogue

Course Code	Knowledge Area/Name of Subject	Theory	Lab	Req. Courses	Req. CH	Prerequisites
Foundation						
CHM-1101	Inorganic Chemistry-I	3	1	9	30	
CHM-1102	Organic Chemistry-I	3	1			
CHM-2103	Physical Chemistry-I	3	1			
CHM-2104	Biochemistry	2	0			
CHM-2105	Industrial Chemistry-I	3	0			
CHM-2106	Environmental Chemistry	3	0			
CHM-2107	Industrial Chemistry-II	3	0			
CHM-2108	Analytical Chemistry-I	3	1			
CHM-2109	Polymer Chemistry	3	0			
Major						
CHM-3201	Analytical Chemistry-II	3	1	11	39	Analytical Chemistry-I
CHM-3202	Organic Chemistry-II	3	1			Organic Chemistry-I
CHM-3203	Inorganic Chemistry-II	3	1			Inorganic Chemistry-I
CHM-3204	Physical Chemistry-II	3	0			Physical Chemistry-I
CHM-3205	Analytical Chemistry-III	3	1			Analytical Chemistry-II
CHM-3206	Organic Chemistry-III	3	1			Organic Chemistry-II
CHM-3207	Inorganic Chemistry-III	3	1			Inorganic Chemistry-II
CHM-3208	Physical Chemistry-III	3	0			Physical Chemistry-III
CHM-4309	Fuel Chemistry	3	0			
CHM-4310	Soil Chemistry	3	0			
CHM-4311	Nanochemistry	3	0			
Electives						
I. Organic Chemistry						
CHM-4701	Reaction Mechanism-I	3	0	4	12	Offered in Final Year Only
CHM-4702	Spectroscopic Methods in Organic Chemistry	3	0			Offered in Final Year Only
CHM-4703	Chemistry of Heterocyclic Compounds	3	0			Offered in Final Year Only
CHM-4704	Organic Synthesis	3	0			Offered in Final Year Only
CHM-4705	Reaction Mechanism-II	3	0			Offered in Final Year Only
CHM-4706	Natural Products	3	0			Offered in Final Year Only
II. Analytical Chemistry						
CHM-4707	Electro-Analytical Techniques	3	0	4	12	Offered in Final Year Only
CHM-4708	Advanced Separation Techniques	3	0			Offered in Final Year Only
CHM-4709	Molecular Spectroscopy	3	0			Offered in Final Year Only
CHM-4710	Environmental Analysis Chemistry	3	0			Offered in Final Year Only
CHM-4711	Hyphenated Techniques	3	0			Offered in Final Year Only
CHM-4712	Atomic Spectroscopy	3	0			Offered in Final Year Only
III. Industrial Chemistry						
CHM-4713	Industrial Safety & Maintenance Management	3	0	4	12	Offered in Final Year Only
CHM-4714	Pharmaceutical Chemistry	3	0			Offered in Final Year Only
CHM-4715	Surface Coating	3	0			Offered in Final Year Only
CHM-4716	Industrial Organization & Management	3	0			Offered in Final Year Only
CHM-4717	Nanotechnology	3	0			Offered in Final Year Only
CHM-4718	Polymer Technology	3	0			Offered in Final Year Only
CHM-4999	Final Year Project-I	0	3	1	6	Offered in Final Year Only
CHM-4999	Final Year Project-II	0	3			Offered in Final Year Only

13.5 MS Industrial Chemistry

I. Compulsory Courses

S. No.	Course Code	Course Name	Credit Hours
1	IC -500	Unit Process and Unit Operation	03
2	IC -501	Industrial Chemical Analysis	03
3	IC -502	Quality Assurance and Automated Analytical Methods	03
4	IC -503	Chemical Thermodynamics	03

II. Elective Courses

S. No.	Course Code	Course Name	Credit Hours
1	IC-504	Advanced Spectroscopic Techniques	03
2	IC-505	Advanced Separation Techniques	03
3	IC-506	Nanotechnology	03
4	IC-507	Advanced Electroanalytical Techniques	03
5	IC-508	Green Chemistry	03
6	IC-509	Environmental Impacts of Chemical Industries	03
7	IC-510	Industrial Safety and Maintenance Management	03
8	IC-511	Research Methodology	03
9	IC-512	Food and Drug Analysis	03
10	IC-513	Statistics in Analytical Chemistry	03
11	IC-514	Validation of Analytical Methods	03
12	IC-515	Industrial Process Chemistry	03
13	IC-516	Surface Chemistry and Catalysis	03
14	IC-517	Organic Synthesis	03
15	IC-518	Heterocylic and Organometallic Compounds	03
16	IC-519	Dyes and Pigments	03
17	IC-520	Fertilizers and Pesticides	03
18	IC-521	Agrochemicals	03
19	IC-522	Polymer Chemistry	03
20	IC-523	Advances in Petrochemical Industries	03
21	IC-524	Corrosion Chemistry	03
22	IC-525	Entrepreneurship	03
23	IC-526	Coal Gasification and Liquefaction	03
24	IC-600	Independent Study Project	03
25	IC-601	Dissertation	03

DEPARTMENT OF MATHEMATICS

CHAPTER

14

14.1 About the department

The Department of Mathematics is established in 2019. The department is also privileged to have highly qualified, multicultural and devoted faculty with Ph.D. and MS/M.Phil. degrees from the best national and international universities. Currently there are 15 faculty members in the department. Our faculty has good research profile in their research fields. All classrooms are also fully equipped with necessary accessories with modern learning. Mathematics covers a range of expertise from the basic mathematical models to numerous advanced applied engineering related to mathematical studies. Mathematics is taught with practical approach which will provide a sound foundation for the Engineering and Computer disciplines. Learners are made to do theoretical work of Mathematics with the help of programming languages such as C++, MATLAB and Python in well-equipped laboratory.

The bachelor's degree in mathematics will emphasize on building a strong background in mathematics. It will equip the students with the analytically skills which will enable them to adapt to new developments in their chosen career. The subject knowledge and transferable skills gained by the students in this programme are highly valued by employers. Therefore, the graduates are likely to find employment opportunities not only in the actuary, academics, researchers, finance sectors, but in many other areas where quantitative analysis and data-handling are essential.

14.2 Mission

The Department mission is to educate and train students to become competent professionals to serve the society in many ways. To prepare our new generation and equip them with the modern curriculum.

The main features of our mission are
   •   To build an understanding of Mathematical operational tools.
   •   Interpretation of data into various forms.
   •   Model oriented studies towards problem-oriented solutions.

14.3 Program Educational Objectives (BS Mathematics)

PEO-1:   The aim of the department's activities is to help students to develop a significant understanding and appreciation of Mathematics as a creative discipline.

PEO-2:   Students graduating from this department get employed in various R&D organizations like SUPARCO, PCSIR, and Pakistan Science Federation, Meteorologist Department of Pakistan and Financial organizations like State Bank of Pakistan and numerous public/private educational sectors.

14.4 Faculty Members

Prof. Dr. Azhar Iqbal
Dean BAS / Professor
PhD (Algebraic Number Theory), FUUAST, Karachi
MPhil (Algebraic Number Theory), FUUAST, Karachi

Dr. Faisal Nawaz
Professor
PhD, Mathematical Modelling, University of Karachi
MPhil (Mathematical Modelling). FUUAST, Karachi

Dr. Faraz Mahmood
Chairman / Associate Professor
PhD (Inequalities in Real Analyses), University of Karachi

Dr. Sumaira Yousuf Khan
Associate Professor
PhD (Operations Research), University of Karachi

Mrs. Zehra A. Naveed
Assistant Professor
PhD, Mathematics, University of Karachi (In Progress)
MPhil (Fluid dynamics), University of Karachi

Dr. Maria Khan
Assistant Professor
PhD, Mathematics, University of Karachi (In Progress)
MPhil (Fluid Dynamics), FUUAST, Karachi

Dr. Nazia Irshad
Assistant Professor
PhD (Mathematical Inequalities), University of Karachi

Dr. Bulbul Jan
Assistant Professor
PhD (Non-Linear Dynamics)
Institute of Space and Planetary Astrophysics, University of Karachi
MPhil (Mathematics), FUUAST, Karachi

Mr. Shafquat Ali Lashari
Assistant Professor
PhD, Mathematics, SMIU, Karachi (In Progress)
MPhil (Fluid Dynamics), Isra University, Hyderabad.

Dr. Sidra Khan
Assistant Professor
PhD, Mathematics, University of Karachi

Mr. Oshaque Ali Abro
Assistant Professor
MPhil (Fluid Dynamics), Shah Abdul Latif University, Khairpur

Mrs. Fouzia Abid
Junior Lecturer
PhD Mathematics, (In Progress)
MPhil (Mathematics),
Eastern Institute for Integrated Learning in Management University, India

Ms. Ismat Zehra
Junior Lecturer
PhD Mathematics, University of Karachi
(In Progress)
MPhil (Mathematics),
University of Karachi

Mr. Fida Hussain Shaikh
Junior Lecturer
MS Mathematics, QUEST,
Nawabshah
BS, Mathematics, QUEST,
Nawabshah.

Ms. Memoona Pirzada
Junior Lecturer
MPhil (Mathematics), QUEST,
Nawabshah

14.5 BS Mathematics Course Catalogue

Course Code	Knowledge Area/Name of Subject	Theory	Lab	Req. Courses	Req. CH	Prerequisites
Foundation						
MTH-1101	Calculus-I	3	0	9	27	
MTH-1102	Calculus-II	3	0			Calculus-I
MTH-1103	Linear Algebra	3	0			Calculus-I
MTH-2104	Differential Equations	3	0			Calculus-I
MTH-2105	Algebra	3	0			Elements of Set Theory and Mathematical Logic
MTH-2106	Mechanics	3	0			
MTH-2107	Multivariable Calculus	3	0			Calculus-II
MTH-2108	Partial Differential Equation	3	0			Differential Equation
MTH-2109	Vector and Tensor Analysis	3	0			Calculus-I
Major						
MTH-3201	Mathematical Statistics	3	0	12	36	Statistics
MTH-3202	Real Analysis	3	0			Multivariable Calculus
MTH-3203	Mathematical Physics	3	0			
MTH-3204	Number Theory	3	0			Linear Algebra
MTH-3205	Complex Analysis	3	0			Real Analysis
MTH-3206	Numerical Analysis	3	0			Linear Algebra
MTH-3207	Differential Geometry	3	0			Calculus-I
MTH-3208	Topology	3	0			
MTH-4209	Advanced Numerical Analysis	3	0			Numerical Analysis
MTH-4210	Operation Research-I	3	0			
MTH-4211	Operation Research-II	3	0			Operation Research-I
MTH-4212	Integral Equations	3	0			
Electives						
MTH-4301	Exploratory Data Analysis	3	0	4	12	Offered in Final Year Only
MTH-4302	Modelling and Simulation	3	0			Offered in Final Year Only
MTH-4303	Time Series Analysis	3	0			Offered in Final Year Only
MTH-4304	Astronomy	3	0			Offered in Final Year Only
MTH-4305	Modern Algebra	3	0			Offered in Final Year Only
MTH-4306	Projective Geometry	3	0			Offered in Final Year Only
MTH-4307	Measure Theory	3	0			Offered in Final Year Only
MTH-4308	Functional Analysis	3	0			Offered in Final Year Only
MTH-4309	General Relativity	3	0			Offered in Final Year Only
MTH-4310	Graph Theory	3	0			Offered in Final Year Only
MTH-4311	Stochastic Processes	3	0			Offered in Final Year Only
MTH-4701	Fluid Dynamics-I	3	0			Offered in Final Year Only
MTH-4702	Fluid Dynamics-II	3	0			Offered in Final Year Only
MTH-4703	Control Theory	3	0			Offered in Final Year Only
MTH-4704	Cryptography	3	0			Offered in Final Year Only
MTH-4705	Biological Modelling	3	0			Offered in Final Year Only
MTH-4706	Fuzzy Set Theory	3	0			Offered in Final Year Only
MTH-4707	Classical Mechanics	3	0			Offered in Final Year Only
MTH-4999	Final Year Project-I	0	3	1	6	Offered in Final Year Only
MTH-4999	Final Year Project-II	0	3			Offered in Final Year Only

CENTRE FOR ENTROPRENEURSHIP MANAGEMENT & EMERGING TECHNOLOGIES

CHAPTER

15

cemet.duet.edu.pk

15.1 About the department

The Centre for Entrepreneurial Management & Emerging Technologies (CEMET) is an initiative aimed at promoting entrepreneurial skills and technological expertise in the field of management. CEMET will offer Bachelor of Science (BS) program in Management & Technology, as well as specialized programs in Industrial Management & Technology, Artificial Intelligence (AI), and Business Information Systems (BIS).

15.2 OBJECTIVES OF CEMET

The primary objective of CEMET focused on following priorities:

1. To establish a leading center that fosters entrepreneurship, management, and technology education in the relevant field with the aim to develop and support local business.
2. To develop specialized programs that cater to the growing demand for professionals skilled in industrial engineering, management, artificial intelligence (AI), business information system (BIS), technology development and its implementation.
3. To conduct research and develop innovative projects focused on value-addition of agricultural products such as fruits and food products, particularly dates, guava, strawberries, and barley, to enhance their shelf life, packaging, and FDA certification for export purposes. However, CEMET scope is beyond this purpose.
4. To create a platform for collaboration between academia, industry, and the entrepreneurial community to promote knowledge sharing, networking, and partnerships.
5. Tie up with relevant government and academic bodies for standards and guidelines.
6. Events/ Seminars/Workshops/Meetups and most importantly consultancy for value added food products.

15.3 Programs Offering

The Centre plans to offer the following programs.
1. BS Artificial Intelligence
2. BS Business Information Systems
3. BS Management & Technology
4. BS Industrial Management & Technology
   The course offerings for BS Artificial Intelligence & BS Business Information Systems are described in Chapter 9 and Chapter 10.

15.4 BS Management & Technology (Major: Technology)

I.   **Program Mission**

To deliver high-quality, values-driven management education fostering national/international business leaders, dedicated to providing innovative solutions that integrate technology and management for a sustainable world, while actively engaging with the profession and the community.

II. Program Educational Objectives

PEO-1: To exhibit effective leadership skills and the ability to drive innovation by integrating management principles with advanced technologies, enabling them to lead teams and contribute to the development of cutting-edge solutions.

PEO-2: To possess an entrepreneurial mindset, identifying and capitalizing on opportunities, and demonstrating a global perspective in understanding and navigating the international business environment.

PEO-3: To uphold ethical standards in decision-making, communicate complex ideas effectively, and contribute positively to their communities, ensuring responsible and impactful professional practices.

III. BS Management & Technology Course Catalogue

Course Code	Knowledge Area/Name of Subject	Theory	Lab	Req. Courses	Req. CH	Prerequisites
Foundation						
MT-1101	Principles of Management	3	0	8	24	
MT-1102	Introduction to Business	3	0			
MT-1103	Principles of Economics	3	0			Introduction to Business
MT-1104	Mathematics for Business	3	0			
MT-2105	Fundamentals of Accounting	3	0			Principles of Economics
MT-2106	Micro-Macroeconomics	3	0			Principles of Economics
MT-2107	Principles of Business Finance	3	0			Principles of Economics
MT-2108	Principles of Marketing	3	0			Principles of Economics
Major						
MT-2201	Statistical Inferences	3	0	13	41	
MT-2202	Emerging Technologies & Applications	3	1			
MT-2203	3-D Modelling & Design	3	1			
MT-3204	Financial Accountinng	3	0			Principles of Economics
MT-3205	Industrial Relations	2	0			
MT-3206	Sustainable Materials	3	0			Data Structures
MT-3207	Food Processing & Preservation	3	1			
MT-3208	Digital Marketing	3	0			Principles of Marketing
MT-3209	Production & Operation Management	3	0			Statistics
MT-3210	Food Processing Technologies	3	0			Food Processing & Preservation
MT-3211	Supply Chain Management	3	0			Production & Operation Management
MT-4212	Quality Management	3	0			
MT-4213	Business Ethics & CSR	3	0			
Electives						
MT-4301	Product Ad-ons	3	0	4	13	Offered in Final Year Only
MT-4302	Agri-product Development	3	1			Offered in Final Year Only
MT-4303	Smart Agriculture	3	0			Offered in Final Year Only
MT-4304	e-Commerce & Digital Businesses	3	0			Offered in Final Year Only
MT-4305	Database Mangement Systems					
MT-4306	Internet of Things					
MT-4307	Machine Learning Applications					
Interdisciplinary Electives						
IDE-x401	Electronic Devices & Circuits	3	1	4	16	
IDE-x402	Industrial Automation	3	1			
IDE-x403	Artificial Intelligence & Machine Learning	3	1			
IDE-x404	Big Data Analytics	3	1			
MGT-4999	Final Year Project-I	0	3	1	6	Offered in Final Year Only
MGT-4999	Final Year Project-II	0	3			Offered in Final Year Only

15.5 BS Industrial Management & Technology (Major: Management)

I.   Program Mission

To deliver a robust education in modern industrial management, emphasizing the creation, integration, and dissemination of knowledge in the design, implementation, operation, analysis, and improvement of industrial processes, while preparing individuals for technical and management careers in agriculture, business, industry, and government, thereby contributing to the advancement of the regional and global economy.

II.   Program Educational Objectives

PEO-1:   Graduates will excel in designing and optimizing industrial processes, ensuring efficiency, and demonstrating proficiency in supply chain management to enhance competitiveness in the global marketplace.

PEO-2:   Graduates will contribute to quality assurance and continuous improvement, implementing data-driven decision-making processes to enhance product and process quality in industrial settings.

PEO-3:   Graduates will prioritize safety, environmental stewardship, and regulatory compliance in industrial operations, while also collaborating effectively across disciplines to foster innovation and problem-solving in the industrial sector.

III. BS Industrial Management & Technology Course Catalogue

Course Code	Knowledge Area/Name of Subject	Theory	Lab	Req. Courses	Req. CH	Prerequisites
Foundation						
IMT-1101	Principles of Management	3	0	8	24	
IMT-1102	Introduction to Business	3	0			
IMT-1103	Principles of Economics	3	0			Introduction to Business
IMT-1104	Mathematics for Business	3	0			
IMT-2105	Fundamentals of Accounting	3	0			Principles of Economics
IMT-2106	Micro-Macroeconomics	3	0			Principles of Economics
IMT-2107	Principles of Business Finance	3	0			Principles of Economics
IMT-2108	Principles of Marketing	3	0			Principles of Economics
Major						
IMT-2201	Human Resource Management	3	0	13	40	
IMT-2202	Management Information Systems	3	1			Introduction to Information & Communication Technologies
IMT-2203	3-D Modelling & Design	3	1			Introduction to Information & Communication Technologies
IMT-3204	Financial Accountinng	3	0			
IMT-3205	Industrial Relations	2	0			
IMT-3206	Financial Management	3	0			
IMT-3207	International Business Management	3	0			
IMT-3208	Digital Marketing	3	0			Principles of Marketing
IMT-3209	Production & Operation Management	3	0			Statistics
IMT-3210	Lean Manufacturing	3	0			
IMT-3211	Supply Chain Management	3	0			Production & Operation Management
IMT-4212	Quality Management	3	0			
IMT-4213	Business Ethics & CSR	3	0			
Electives						
IMT-4301	Strategic Management	3	0	4	13	Offered in Final Year Only
IMT-4302	Data Analytics for Business	3	1			Offered in Final Year Only
IMT-4303	Cross Cultural Management	3	0			Offered in Final Year Only
IMT-4304	Strategic Human Resource Management	3	0			Offered in Final Year Only
IMT-4305	Leadership in Organizations	3	0			Offered in Final Year Only
IMT-4306	Sustainable Business Practices	3	0			Offered in Final Year Only
IMT-4307	Islamic Finance & Business	3	0			Offered in Final Year Only
IMT-4308	Enterprise Resource Planning	3	0			Offered in Final Year Only
Interdisciplinary Electives						
IDE-x401	Electronic Devices & Circuits	3	1	4	15	
IDE-x402	Industrial Safety & Maintenance	3	0			
IDE-x403	Computer Integrated Manufacturing	3	1			
IDE-x404	Web Development & Design	3	1			
MGT-4999	Final Year Project-I	0	3	1	6	Offered in Final Year Only
MGT-4999	Final Year Project-II	0	3			Offered in Final Year Only

SCHEME-Categories
and Admission Policy
(Undergraduate Programs)

CHAPTER

16

16.1 Scheme Categories for admission in BE/BArch

Merit Self-Finance Seats

S. No.	Category	No. of Seats	ESE	CH	PG	IN	ISE	MAT	EE	CS	AR
1	Sindh (Urban)	342	26	27	12	12	40	14	15	12	13
	Sindh (Rural)		26	27	12	12	40	14	15	12	13
2	DUET Teaching Staff	7	2	2	0	1	0	0	0	2	0
3	DUET Non-Teaching Staff	7	2	2	0	1	0	0	0	2	0
4	Professional Engineers (Sons/daughter)	3	0	0	1	1	0	1	0	0	0
5	Professional Architects (Sons/daughter)	1	0	0	0	0	0	0	0	0	1
6	Azad Kashmir (AJK)	13	2	1	1	1	2	1	1	2	2
Total General Merit		**373**	**58**	**59**	**26**	**28**	**82**	**30**	**31**	**30**	**29**
7	Self-Finance (Local)	61	9	11	4	9	10	1	0	11	6
8	Self-Finance Foreign/Overseas Pakistani	11	2	2	2	2	0	0	0	2	1
Total Self-Finance		**72**	**11**	**13**	**6**	**11**	**10**	**1**	**0**	**13**	**7**
Grand Total		**445**	**69**	**72**	**32**	**39**	**92**	**31**	**31**	**43**	**36**

Nomination Seats

S. No.	Category	No. of Seats	ESE	CH	PG	IN	ISE	MAT	EE	CS	AR
9	Punjab Reciprocal (HSC/A-Level only)										
	UET Lahore	1	0	0	0	0	1	0	0	0	0
	UET Taxila	1	1	0	0	0	0	0	0	0	0
	Govt. of Punjab	1	0	0	0	0	0	0	1	0	0
10	KPK										
	UET Peshawar	1	1	0	0	0	0	0	0	0	0
	Govt. of KPK	1	0	0	0	0	0	0	1	0	0
11	Baluchistan Nominee	20	2	2	2	3	1	4	3	1	2
12	FATA Nominee	10	1	1	1	2	1	2	0	1	1
	FATA (Additional Seats)	10	1	1	1	1	1	1	2	1	1
13	Gilgit Baltistan (Nominee)	13	2	1	1	2	1	1	2	2	1
14	OIC (Nominee)	17	2	2	3	2	2	2	0	2	2
15	Muslim Dist. of Candy Sri Lanka (PTAP)	1	0	0	0	0	0	0	1	0	0
16	Dawood Foundation	2	0	0	1	1	0	0	0	0	0
17	Federal Capital Area	2	0	0	0	1	0	0	0	0	1
18	GHQ	7	2	2	0	0	0	0	1	1	1
Total		**87**	**12**	**9**	**9**	**12**	**7**	**10**	**11**	**8**	**9**
Overall Total		**532**	**81**	**81**	**41**	**51**	**99**	**41**	**42**	**51**	**45**

Abbreviations: ESE = Electronic Engineering, CH = Chemical Engineering, PG = Petroleum & Gas Engineering, INE = Industrial Engineering & Management, ISE = Information Security Engineering, MAT = Material Engineering, EE = Energy & Environment Engineering, CSE = Computer System Engineering, AR = Architecture & Planning

Note:

1. Fourteen (14) seats are reserved for the teaching and non-teaching employees of university. The seats remaining vacant in both categories shall be interchangeable to each other. The admission committee may consider request for admission in other technology, subject to availability of vacant seat. However, the number of seats will remain fixed.

2. All vacant seats in DUET Admission Policy and Procedure (Scheme and Categories for Admission in BE/BArch) shall be distributed on "open merit" after exhausting the deadline/formalities after the display of third (3rd) merit list.

3. The competent authority reserves the rights to make changes in the allocation of seats or in any policy matter at any time without notice.

16.1.3 Description/Eligibility of Merit/Self-Finance Seats

S. No.	Category	Description/Eligibility
1	Sindh	**(a)** Candidate fulfills General Eligibility Criteria mentioned in section 3. **(b)** Candidates is domiciled in Sindh. **(c)** Candidates have passed their S.S.C. and H.SC (or Equivalent) examinations from any board in Sindh or colleges of Sindh affiliated with Aga Khan University Examinations Board or colleges of Sindh affiliated with Federal Board or an equivalent Foreign Examination from colleges of Sindh.
2	DUET Teaching Staff	**(a)** Candidate fulfills General Eligibility Criteria mentioned in section 3. **(b)** Real son/ Real daughter/ Real brother/ Real sister of the university teacher (serving or retired, deceased, on lien or working on deputation with other Institutions) are eligible for admission. First preference will be given to real sons/daughters of university teacher.
3	DUET Non-Teaching Staff	**(a)** Candidate fulfills General Eligibility Criteria mentioned in section 3. **(b)** Real son/ Real daughter/ Real brother/ Real sister of the university employee (other than teacher) (serving or retired, deceased, on lien or working on deputation with other Institutions) are eligible for admission. First preference will be given to real sons/daughters of university employee

4	Professional Engineers (Sons/daughter)	**(a)** Candidate fulfills General Eligibility Criteria mentioned in section 3.
		 (b) Real Sons/Daughters of Professional Engineers registered with PEC. The applicant must attach the following additional documents.
		    i. Copy of Engineering Degree of the parent
		    ii. Proof of valid registration with Pakistan Engineering Council.

5	Professional Architects (Sons/daughter)	**(a)** Candidate fulfills General Eligibility Criteria mentioned in section 3.
		 (b) Real Sons/Daughters of Professional Architects registered with PCATP. The applicant has to attached following additional documents.
		    i. Copy of Architecture & Planners Degree of the parent
		    ii. Proof of valid registration with Pakistan Council of Architects and Town Planners (PCATP)

6	Azad Kashmir (AJK)	**(a)** Candidate fulfills General Eligibility Criteria mentioned in section 3. **(b)** Candidates are domiciled of any district in Azad Jammu Kashmir
7	Self-Finance (Local)	**(a)** Candidate fulfills General Eligibility Criteria mentioned in section 3. **(b)** The Candidates holding the domicile and PRC of any area of Pakistan having passed H.S.C. (Pre-Engineering) Examinations from any authorized Board of Education in Pakistan or an equivalent Foreign Examination recognized by HEC/IBCC. **(c)** The separate merit list will be prepared on overall merit basis in accordance with merit policy. **(d)** There shall be no quota of Sindh province or for urban and rural areas of the provinces under this scheme.
8	Self-Finance (Foreign)	**(a)** Foreign national candidates desiring to apply against this category must have passed H.S.C Pre-Engineering examinations or an equivalent foreign examination with at least 60% aggregate marks. **(b)** Eligible candidates interested to apply under this category must apply for admission through their Embassies via the Higher Education Commission, Islamabad/ Ministry of Finance Planning & Provincial Coordination (Economic Affairs Division). Government of Pakistan, Islamabad. **(c)** The admission shall be granted only to those applicants who are declared eligible and got equivalent certificate from the Chairman Inter Board Committee Islamabad. **(d)** The vacant seats of Self Finance Foreign shall be offered to Local candidates

16.1.4 Description/Eligibility of Nomination Categories

S. No.	Category	Description/Eligibility
9	PUNJAB (Nominee of UET Lahore)	**(a)** Candidate fulfills General Eligibility Criteria mentioned in 16.5. **(b)** Candidates domiciled in Punjab Province, nominated by the UET Lahore through Higher Education Department, Govt. of Punjab
	PUNJAB (Nominee of UET Taxila)	**(a)** Candidate fulfills General Eligibility Criteria mentioned in in 16.5. **(b)** Candidates domiciled in Punjab Province, nominated by the UET Taxilla through Higher Education Department, Govt. of Punjab
	PUNJAB (Reciprocal)	**(a)** Candidate fulfills General Eligibility Criteria mentioned in in 16.5. **(b)** Candidates domiciled in Punjab Province, nominated by Government of Punjab through Higher Education Department, Govt. of Punjab.
10	KPK (Nominee of UET Peshawar)	**(a)** Candidate fulfills General Eligibility Criteria mentioned in in 16.5. **(b)** Candidates domiciled in Khyber Pakhtunkhwa Province, nominated by the UET Peshawar through Higher Education Commission, Archive and Library Department, Govt. of Khyber Pakhtunkhwa.
	KPK (Reciprocal)	**(a)** Candidate fulfills General Eligibility Criteria mentioned in 16.5. **(b)** Candidates domiciled in Khyber Pakhtunkhwa Province, nominated by Govt of Khyber Pakhtunkhwa, through Higher Education Commission, Archive and Library Department, Govt. of Khyber Pakhtunkhwa.
11	Baluchistan (Nominee)	**(a)** Candidate fulfills General Eligibility Criteria mentioned in 16.5. **(b)** Candidate is nominee of Balochistan whose names are forwarded by Education Department; Government of Baluchistan and fulfills following eligibility criteria whichever is applicable.
12	FATA (Nominee)	**(a)** Candidate fulfills General Eligibility Criteria mentioned in 16.5. **(b)** Candidate is domiciled in Federally Administered Tribal Areas (FATA) whose names are forwarded by State & Frontier Region Division Government of Pakistan, Islamabad.
13	Gilgit Baltistan (Nominee)	**(a)** Candidate fulfills General Eligibility Criteria mentioned in 16.5. **(b)** Candidate is domiciled in Gilgit-Baltistan, whose names are forwarded by Kashmir Affairs & Gilgit-Baltistan Division; Government of Pakistan Islamabad.
14	OIC (Nominee)	**(a)** Candidate fulfills General Eligibility Criteria mentioned in 16.5. **(b)** Candidates hold the nationality of member country of OIC whose names are forwarded by Ministry of Economic Affairs Division, Government of Pakistan, Islamabad.
15	Muslim Districts of Candy (Sri Lanka)	**(a)** Candidate fulfills General Eligibility Criteria mentioned in 16.5. **(b)** Candidates hold the nationality of District Candy Sri Lanka whose names are forwarded by Ministry of Economic Affairs Division, Government of Pakistan, Islamabad.
16	Dawood Foundation	**(a)** Candidate fulfills General Eligibility Criteria mentioned in 16.5. **(b)** Candidates whose names shall be forwarded by Dawood Foundation.
17	Federal Capital Area	**(a)** Candidate fulfills General Eligibility Criteria mentioned in 16.5. **(b)** Candidate is domiciled in Federal Capital Area whose names are forwarded by Cabinet Secretariat, CAD, Government of Pakistan; Islamabad.
18	GHQ	**(a)** Candidate fulfills General Eligibility Criteria mentioned in 16.5. **(b)** Children of Army Personnel and whose names are forwarded by Welfare Rehabilitation Directorate, GHQ, Rawalpindi.

16.2 Seats Distribution for BS Programs

S. No.	Category	No. of Seats	CS	AI	CY	DS	ES	MTS	IMT	MT	CHM
1	Open Merit	810	148	144	144	144	47	47	47	47	42
2	Employees of DUET	45	12	6	6	6	3	3	3	3	3
3	Self-Finance	245	90	50	50	50	-	-	-	-	5
	Total	1100	250	200	200	200	50	50	50	50	50

16.3 General Eligibility Criteria (Undergradute Programs)

S. No.	Programs	Description/Eligibility

1	BS/BArch Programs	1. Intermediate / A-Level (IBCC equivalency required for merit calculation)/DAE with minimum 50% result (excluding grace marks) having group/major in:
		  i. Pre-Engineering
		  ii. Pre-Medical with Additional Maths
		  iii. Computer Science
		2. The age of candidate shall be not more than 25 Years (For admission in BS) and 22 years (for admission in B Arch.) till last date of form submission for entry test.

2	BE Programs	1. Intermediate / DAE / A-Level (IBCC equivalency required for merit calculation) passed with minimum 60% result (excluding grace marks) having group/major in:
		  i. Pre-Engineering (Physics, Chemistry and Mathematics)
		  ii. Pre-Medical (Physics, Chemistry and Biology) with Additional Maths
		  iii. Science (General group). Physics, Mathematics and Computer Science/Computer Studies (For all Engineering Programs with Chemistry as remedial subject/course in the 1st semester after admission. The remedial shall not be required for admission in Computer System Engineering/Electronic Engineering/Telecommunication Engineering)
		2. DAE applicants shall be considered only for admission in technologies mentioned in table DAE accepted technologies mentioned in below table.
		3. Two-year gap is allowed for admission after HSC / DAE.
		4. The age of candidates shall be not more than 22 years till the last date of form submission for entry test.

16.3.1 DAE accepted technologies for BE / B. Arch Programs

S. No.	Technology	Relevant field of Diploma
1	Electronics Engineering	Automation/Avionics/Bio-Medical/Electrical/Electronics/Instrumentation/Instrumentation & Process Control/Mechatronics/Radar/Radio/Telecommunication
2	Chemical Engineering	Chemical/Chemical Processing/Chemical with any specialization/Footwear/Glass, Ceramics & Pottery Development/Leather/Petro Chemical/Petroleum
3	Petroleum & Gas	Chemical/Petrochemical/Petroleum
4	Industrial and Manufacturing Engineering	Auto & Diesel/Automation/Cast Metal & Foundry/Chemical/Dies & Molds/Glass, Ceramics & Pottery Development/Mechanical/Mechanical (Construction Machinery)/Mechanical (Production)/Mechanical with any specialization/Mechatronics/Vacuum
5	Telecommunication Engineering	Automation/Avionics/Computer/Computer Information/Electrical/Electronics/Instrumentation/Instrumentation & Process Control/Radar/Radio/Software/Telecommunication
6	Computer Engineering/Computer Systems Engineering/Computer Software Engineering	Automation/Computer/Computer Information /Electrical /Electronics /Instrumentation /Instrumentation & Process Control/Radar/Radio/Software/Telecommunication
7	Architecture	Architecture / Civil

16.4.1 Ineligibility of Candidates (applicable to all categories of admission)

i. Convicted by a Court of law for an offense involving moral turpitude.

ii. The candidate has not obtained equivalence certificate from the Chairman Inter Board Committee Islamabad before interview (if applicable).

iii. Candidate seeking admission on seats reserved for D.A.E. in any technology / sub technology not specified in the table of DAE accepted technologies.

iv.   Candidate whose any certificates are found tempered. A legal Criminal action would be taken against such, candidate(s).

v.   Candidate who has already obtained admission elsewhere in Pakistan unless he/she submits cancellation certificate of admission from the said institution.

16.4.2 Rejection of application

i.   The Vice Chancellor of the University is competent to reject/cancel any application without assigning any reason.

ii.   The application shall be rejected summarily in case the applicant is found guilty of any suppression or misrepresentation of material facts at any stage. The Vice-Chancellor can further debar him from seeking admission in the University.

16.4.3 ADMISSION POLICY (Undergraduate Programs)

i.   All undergraduate degree programs are full time programs.

ii.   Admission in each category/scheme shall be granted purely on merit basis as prescribed in admission notice and admission policy.

iii.   To appear in the entry test, application processing fee of Rs.3000/- (Non-refundable) is required to be paid at any branch of prescribed bank. The challan shall be available online after the submission of the form.

iv.   The candidates who are interested to apply under more than one category including self-finance can select multiple categories in the online application form. In case an applicant qualifies under more than one category he/she shall have to select his/her category at the time of the interview before the admission committee/interview panel.

v.   Admission in each discipline will be offered to candidates in the order of merit.

vi.   The overall merit in respect of candidate for each category for provisional admission shall be determined based on S.S.C (or equivalent certificate), H.S.C/ A-Level/DAE (or equivalent certificate) and entry test.

vii.   Original documents shall have to be produced at the time of scrutiny/interview.

viii.   The candidates who apply for admission based on fake/tempered documents (detected before or after their admission) their admission shall be canceled. Additionally, they may also be debarred for a period of three years for future admissions and all payments made to the University shall be forfeited in favor of the University.

ix.   H.S.C original mark sheet will not be returned under any circumstances before the completion of degree.

16.4.4 DETERMINATION OF MERIT POSITION

i.   All candidates seeking admission under different schemes/ categories/programs are required to appear in the entry test. However, applicants seeking admission on seats for nominations seats are exempted from the entry test.

ii. In the entry test, for each correct answer one mark will be awarded.

iii. The merit list of the candidates in each category/scheme will be prepared according to the following weightage.

S. No.	Percentage of marks in	Multiplying Weightage
1	Entry Test	60%
2	(a) HSC/A-level (waiting for 2nd Year Result who appeared in the year 2023 (1st Year O-Level) (b) DAE (waiting for 3rd Year Result who appeared in the year 2023 (1st and 2nd Year Combined) (c) HSC/A-level/DAE Combined result available passed in previous years	30%
3	SSC or equivalent certificate	10%

Based upon the above weightage the Composite Percentage Number (CPN) will be calculated as under

CPN= 0.6[Percentage obtained in entry test] + 0.3[Percentage Marks Intermediate (or equivalent certificate)] +0.1[SSC or equivalent]

iv. The merit shall be observed in each category as per availability of seats. The admission in each category shall be made in order of choice of technology given by the candidates in online application form.

v.   If the HSC/DAE/A-Level (combined) passing year is one year before the current year 10% shall be deducted from the HSC-obtained marks and If the HSC/DAE/A-Level (combined) passing year is more than 1 year before the current year 20% shall be deducted from the HSC obtained marks.

vi. In case of tie for merit position in the selection for admission, the tie will be resolved based on marks obtained in entry test. In case of further tie, it will be resolved based on marks in HSC.

vii. Applicants securing CPN less than 50, shall not be eligible for the admission.

16.4.5 Display of merit list of eligible candidates

i.   The Merit list for each category/scheme shall be notified and displayed on the University Notice Boards and will also be made available on the University Website.

ii. University reserves the right to withhold/cancel the result of the entry Test of any candidate if he/she was found using any unfair means in the test or candidate has carried out impersonation in the test.

16.4.6 Scrutiny of the application and interview

i.   After basic scrutiny of the application forms and announcement of the result of the entry test, the merit list will be prepared in each category and an appropriate number of students will be called to present themselves before the admission committee/interview panel of the University for interview and verification of original academic documents on the notified dates.

ii. The names of those candidates who fail to present themselves before the admission committee/interview panel on the scheduled date and time, without any intimation, shall be deleted from the merit list of the category concerned. They shall not be considered for admission. Their absence shall amount to forfeit of their right of admission.

iii. Only original documents shall be accepted by the admission committee/interview panel. No exception shall be allowed.

iv. The candidate must produce original first mark sheet of HSC issued by the concerned board at the time of enrollment failing which his/her name will be deleted from the merit list.

v. The decision of the admission committee shall be final.

vi. The selected candidates shall submit the following forms (Available on University website) at the time of reporting to concerned Chairperson of Department.

a. Declaration of non-participation in political activities and non-indulgence in unwanted activities on judicial stamp paper of Rs. 100.

b. Medical fitness certificate

c. Performa for University Identity Card.

d. Enrolment form of university

16.4.7 Award of discipline/technology

i. The candidates are required to fill up Order of Choices in the online application form to select their priority of discipline/technology very carefully. The choices mentioned in the option form can only be changed at the time of interview.

ii. If any student after seeking admission in technology other than first choice of discipline is satisfied with the same, must apply within three days from the date of display of such list. In the application it must be clearly mentioned that the applicant is satisfied with the awarded discipline and the discipline/technology shall not be changed further.

iii. If such application is not received, the admission committee may change the technology/discipline as per the original choice to fill the vacant seats and such change will be binding on the students.

16.4.8 Admission of candidates who fail to deposit the admission fee within the due date.

i. If any candidate fails to deposit the admission fee within the due date, the seat shall be allotted to another candidate on merit. At the later stage, if the candidate reports for admission that may be considered for admission against the left-over seats of the respective category as per the "Choice of Technology" before the closing date of admission.

16.4.9 Display of list of selected candidates and correction in merit list

i. The list of all selected candidates under all categories shall be displayed on the University website and main notice boards.

ii. The admission list in each category announced by the University is provisional; in case of identification of any mistake it shall be rectified.

16.4.10 Closing of admission

i. The admissions on Merit / Self Finance Seats will be closed at the end of 4th week from the date of start of the classes. After the closing date of admission, no new admission will be made, and the seats fallen vacant (for any reason) will not be filled.

16.4.11 Change of discipline /technology

i. No request to change of technology is entertained at any stage of admission process.

16.4.12 Enrolment with DUET

i. The selected candidates will have to fill up enrolment form of the University and complete all the relevant formalities for enrolment. Without having Enrolment Card, they will not be allowed to appear in the semester examination.

ii. In case any mistake in the enrollment card, student must inform the Registrar office within 15 days of issuance. After the closing date, applicant shall bear the cost for correction of record.

16.4.13 Cancellation/ withdrawal of admission

i. Concealment of facts at the time of seeking admission or non-submission of complete and genuine documents or tempering with them or falsifying would mean that the student has been admitted illegally. In such case the admission of the student shall be cancelled. University also reserves the right to initiate legal action against such student.

ii. The Competent Authority may cancel the admission of any student at any stage after giving an opportunity of hearing at the appropriate forum.

iii. In case of any discrepancy or misinterpretation, the decision of the competent authority shall be final and binding on the applicant and shall not be challengeable in any court of Law.

16.4.14 Rollover Admission Policy

i. Applicants wishing to apply for rollover admission must indicate this preference on the admission form.
ii. The University's admission office will extend offers of admission to eligible rollover applicants in the subsequent academic year, based on academic merit and seat availability.
iii. To secure admission, applicants must accept the offer using the prescribed form, follow the guidelines outlined in the admission offer letter, and adhere to deadlines for fee payment and other university charges.

16.5 Rules for Admissions

i.   Candidates applying under regular scheme from the Province of Sindh, Azad Jummu & Kashmir, Self-Finance Scheme, and those applying on reserved seats for categories of Dawood University Teaching and Non- teaching staff, sons and daughters of professional Architect / Engineers, Dawood Foundation and Federal Capital Area are required to apply through online application system for entry test.

ii.   Following is the procedure of online admission application system.

•   Register online with CNIC/email number at university admission portal https://admissions.duet.edu.pk/login/ and follow the guidelines given.
•   After successful registration, login the account and submit the form.
•   Provide complete and true, personal / educational information in online admission form.
•   Provide complete postal and permanent address for smooth communication of admit cards / interview letters later.
•   Upload recent passport size photograph in online admission application form. Admit card will not be issued to candidates who uploaded casual pictures.

iii. In the application form it is mandatory for candidates to provide their active mobile number (Non converted) for quick alternative communication.

iv.   After successful submission, the submitted form shall appear and print challan option shall be visible to candidates, please print the challan, and pay the required fee at designated Bank.

v.   Once the deadline for submitting the online admission form has passed, students will be able to access their admit cards online via their account on the admission portal.

vi.   Admit card shall only be issued to those candidates who pictures are as per given criteria.

vii. Important instructions about test will be present on Admit Card.

viii. After test the result of test shall be announced via admission portal

ix.   All information regarding admissions will be communicated via Student Admission Portal.

16.6 Application Process for Nomination Categories

All the nominating agencies / department candidate shall process their admission as per following Standard Operating Procedure:

•   After being nominated letter from their respective agency, the candidate is required to report within 7 days or on the date as informed by the DUET Admission office via phone / sms.
•   The student shall report to Admission Office with original documents and copies with 4 passport size photographs and fee for 1st semester.
•   Student shall pay the fee in designated Branches on the given fee challan issued by the Admission Office.

- After submission of fee student shall report to concerned department and get his roll number slip signed and stamped by the Chairperson.

16.7 Admission Confirmation

Initially students are provisionally admitted at university, and their admission confirmation is subject to the fulfillment of the following:

- Submission of all mandatory documents required for confirmation of admission including Intermediate/A level result certificate.
- Verification of original educational documents.
- Payment of full applicable fee of the semester.
- Submission of equivalency certificate (if applicable) from IBCC/HEC etc.
- Statement of Entrance for O-Level / A-Level candidates along with other documents
- Fulfillment of all other mandatory requirements for the confirmation of admission

16.8 Submission of document to admission office

i.   Students admitted on result waiting will submit their last attended degree result card positively within 3 weeks of announcement of result; failure to which student will not be allowed to sit in Mid semester / semester exams and may also leads to the cancellation of provisional admission in university.

ii. If the student fails to fulfill the required eligibility criteria for admission, the Provisional Admission offer will stand cancelled; application can apply for the free refund as per university policy.

iii. Application for "Fee Refund" will NOT be entertained after 3 weeks of announcement of result.

16.9 Cancellation of provisional Admission

The provisional admission of the student shall be cancelled automatically due to the following:

i.   Applicant, who fails to submit pending mandatory documents within a stipulated time, their admission shall be cancelled, and they shall be disqualified from the rolls of university.

ii. Any candidate providing false information, their admission shall be cancelled and shall be placed in blacklisted candidate.

iii. The admission of any student, violating Code of Conduct for Students, shall stand cancelled.

16.10 Procedure for correction in student's personal data

i.   Applicant's personal data (name, father name, Date of Birth (DOB)) on S.S.C certificate/ O-Levels certificate shall be registered and appeared on Transcript / Degree issued by the University.

ii. At the time of admission, the applicant is required to enter his/her personal data in accordance with his/her S.S.C / O-Levels certificate.

iii. In case of correction in student's personal data, he/she shall be first required to get the S.S.C/O-Level DMC/ Certificate revised and submit the revised S.S.C/O-Level certificate to university for change in personal data.

iv.   Please note that, you need to apply for the change in personal data well before the printing of final transcript/Degree. In case of applying after printing of transcript / Degree, you will be required to pay the prescribed fee.

v.   Please note that, you need to apply for the change in name or father name or DOB well before the printing of final transcript/Degree. In case of applying after printing of transcript / Degree, you will be required to pay the prescribed fee.

16.11 Verification of documents

i.   University can send student's documents for verification at any stage.

ii.   In case of fake documents, the student admission will be cancelled immediately.

16.12 General Instructions for new students

- Make sure your attendance on the Orientation Session.
- After submission of all required documents, the Registrar Office shall issue student ID card to the department concerned, a student can get it from your academic department.
- Get your University ID card and display it all the time when on campus.
- The security guards have instructions to ask to show your ID card; and if not produced, have the authority to restrict entry or movement on Campus.
- Get your library card.
- Get your Batch Advisor name and location.
- Make sure all your courses are registered.
- Make sure your name is present in the attendance sheet.
- Get the course outlines from the concerned course teachers.
- Check for the deadline of Drop / Withdrawal courses in case required.
- Meet deadlines when submitting your application for the scholarships.
- Abide by University rules.
- In case of any ambiguity consult your Batch Advisor or Academic department Head.

16.13 DUET Admission Test Pattern

S.NO	COMPULSORY / OPTIONAL	GROUP	SUBJECTS	NUMBERS OF QUESTIONS	MARKS
1	Compulsory		English	25	25
			Analytical Reasoning	10	10
			General Knowledge	15	15
2		Pre-Engineering / Pre Medical with Addl maths	Physics	20	20
			Chemistry	10	10
			Maths	20	20
		Computer Science / General Science	Physics / Statistics	20	20
			Math	10	10
			Computer	20	20
		Pre- Medical	Physics	20	20
			Chemistry	10	10
			Biology	20	20
3		Commerce	Business Math	20	20
			Economics	10	10
			Accounting	20	20
4	Optional	Arts	English Comprehension	25	25
			General Math	25	25

REGUALTIONS FOR FEE & OTHER MISCELLINEOUS CHARGES

CHAPTER

17

17. REGULATIONS FOR FEE AND OTHER MISCELLANEOUS CHARGES

These rules apply to every student of the University and will take effect immediately.

17.1 Admission Processing Fee:

Payable once at the time of admission by all students (Regular and Self Finance) of B.S/B.E/B.Arch. /M. S/Ph.D.

Head of Account	Local Student (PKR)	Foreign Students (USD) Equivalent to PKR
Admission Fee	5000	250
Security (Refundable)	5000	
Total	**10000**	**250**

17.2 Semester Fee (All Local Students)

Head of Account	PhD	MS	All UG programs
	(PKR)	(PKR)	(PKR)
Semester Registration Fee	6000	6000	6000
Tuition Fee per credit hour	5000	5000	3700
Transport/Fuel Charges (optional)	N/A	N/A	7000

17.3 Semester Fee (Foreign Students)

Head of Account	PhD	MS	All UG programs
	USD	USD	USD
Semester Fee	200	200	150
Tuition Fee per credit Hour	100	100	70
Transport/Fuel Charges (Optional)	50	50	50

(1) All the students shall pay their semester fees calculated on the challan, based on the number of courses registered and fixed heads defined in above table.

(2) Foreign students shall pay their fee in Pakistani Rupees, equivalent to their fee in USD.

(3) The validity of the challan shall be 45 days from date of commencement of semester. Fee Paid after due date shall be subject to late fee penalty of 10%.

(4) Dean of faculty may recommend waiver off the late fee penalty or allow fee installment on financial hardship faced by the students to Vice Chancellor for final consideration & approval.

(5) Student's academic transcript or degree certificate will be withheld if they have any unpaid fees.

(6) Transport/Fuel Charges shall be charged from only those students who opt for the transport Services of the University

17.4 Self-Finance Fee*

Head of Account	BE (Electronics/ Computer)	BE (Chemical/ Industrial Eng. & Mgt)/ B.Arch.	BE (ISE Information Security Engineering / Petroleum and Gas/ Metallurgy and Materials / Energy and Environment)	BS (CS /Cyber Security/ Artificial Intelligence)
Total Self Finance Fee	(Pak Rupees) 600,000+ Taxes	(Pak Rupees) 400,000+ Taxes	(Pak Rupees) 300,000+ Taxes	(Pak Rupees) 400,000 + Taxes

*Payable once at the time at the time of admission

17.5 Foreign Students Fee*

Head of Account	BE (Electronics/ Computer)	BE (Chemical/ Industrial Eng. & Mgt)/ B.Arch.	BE (ISE Information Security Engineering / Petroleum and Gas/ Metallurgy and Materials / Energy and Environment)	BS (CS /Cyber Security/ Artificial Intelligence)
Total Self Finance Fee	(USD) 4,000+ Taxes	(USD) 3,000+ Taxes	(USD) 2,500+ Taxes	(USD) 3,000 + Taxes

*Payable once at the time at the time of admission

(1) Candidates applying against more than one discipline under self-finance scheme may only deposit self-finance fee for only one discipline. In case of difference in amount of self-finance, the highest amount needs to be deposited.

(2) Chairperson/Convener admission committee may allow payment of Self-Finance Fee in up to fourth equal installments on receiving the written request from the applicant/parent. In such case validity of the challan shall be 45 days from date of commencement of semester when such installment is due. Fee Paid after due date shall be subject to late fee penalty of 5%.

(3) Above mentioned amount will be refunded if candidate is not admitted/ secured admission under the self-finance scheme.

(4) Students admitted under self-finance scheme/ foreign students shall pay the University fees as per regulations of the University for specific program.

17.6 Other charges from MS/PhD program

(1)   Students enrolled in PhD shall pay semester Registration Fee during their research work.

(2)   Semester registration fee shall be applicable during whole study period for PhD/MS

(3)   During their research work, students are required to pay a fee of Rs 10000/- per semester for research supervision and access to research laboratory facilities.

(4)   Except for the security deposit, which will be refunded after the student leaves the University, all fees paid by the student are non-refundable.

17.7   Fee Refund Policy

(1)   University shall follow the HEC Fee refund Policy. (Revised 2024) (Amendment Duet 2025)

(2)   100% semester Fee shall be refunded, if Students admitted on result waiting does not meet the criteria of provisional admission provided applicant apply for the refund within 3 weeks of announcement of result; failure to which applicant shall not be allowed to any refund.

(3)   The Admission Fee, once it has been paid, is non-refundable under any circumstances

17.8   Collection of withholding taxes

(1)   As per FBR Financial Act 2020, clause 236 (I), 5% withholding tax will be collected upon accumulation of total fee exceeding 200,000 from persons not appearing in the Active Taxpayers List of FBR.

(2)   However, Oversees Pakistani/expatriate whose children are studying in various programs of university, may be exempted from payment of advance tax if they fulfill/provide the following conditions/documents as per Clause 236 (I) of Income Tax Ordinance 2001.

(3)   A copy of passport as evidence to the Campus that during any tax year, his stay in Pakistan was less than one hundred eighty-two days

(4)   A certificate on proper legal paper that he has no Pakistani source of income

(5)   Transactional proof that the fee is remitted directly from aboard through normal Banking channels to bank account of university.

(6)   Security deposit shall be refunded after the completion of degree program upon providing the clearance certificate.

17.8 (B)   Admission cancellation Charges

(1)   BE/BS Students applying for admission cancellation in their 2nd (Second) semester or later must pay cancellation fees as per the following formula:
Admission Cancellation Charges (Rs) = (Total No. of the Credit Hours of the Program - Credit Hours Completed) x Credit Hour Fee.

17.9   Migration Fee

(1)   The local applicant if admitted based on migration shall be required to pay non-refundable migration fee of Rs. 400,000/- (Rupees Four Hundred Thousand Only) + Taxes through pay order in favor of Director Finance, Dawood University of Engineering and Technology, Karachi. The above prescribed migration fee for the local student shall be paid within two (02) weeks by the applicant after receiving the notice of terms and conditions by the Office of Registrar.

(2)   The foreigner applicant if admitted based on migration shall be required to pay non-refundable migration fee of Rs. 600,000/- (Rupees Six Hundred Thousand Only) + Taxes through pay order in favor of Director Finance, Dawood University of Engineering and Technology, Karachi.

(3)   The above prescribed migration fee for the foreigner applicant shall be paid within two (02) weeks by the applicant after receiving the notice of terms and conditions by the Office of Registrar.

(4)   For the student migrating from Dawood University of Engineering and Technology to another institute/college shall pay Rs. 5,000/- (Rupees five thousand only) as processing fees in the account of the University through Challan/ Voucher.

17.10 University reserves the right to change the fee structure any time.

STUDENTS FACILITIES

CHAPTER

18

DAWOOD UNIVERSITY OF ENGINEERING
&
TECHNOLOGY KARACHI

18.1 DUET SCHOLARSHIP PROGRAM

The University recognizes the immense potential of students who have demonstrated exceptional merit in their academic pursuits and understands the financial hardships that many of them face. With the aim of supporting such deserving students, the University is proud to announce the DUET Scholarship Program. These scholarships will provide financial assistance to students who have excelled academically but are struggling to meet the financial requirements of their education. In line with this commitment, the University is pleased to offer 300 scholarships at the time of admission in undergraduate programs, to ensure that deserving students can continue to pursue their academic goals with the support they need.

1. Distribution of seats

a) 60% of the scholarships of total shall be reserved for students seeking admission in to B.E/B.Arch. program.

b) 10% of the scholarships of total shall be reserved for female students and for students with special needs. Priority shall be given to students with special needs.

2. Types of Scholarships

(I) DUET Scholarship program
   (a) 50% scholarships   150 seats
   (b) 100 % scholarships   150 seats

(II) DUET Employees Scholarship Program (for subsequent years only)

   (a) 50% scholarships for children of university employees admitted on reserved seats.
   (b) 75 % scholarships for children of university employees admitted on merit seats.

(III) Merit Scholarship

(Note: Above scholarship programs shall not cover Admission Fee, Security Deposit and transport fee (if applicable)

3. Eligibility Criteria of the DUET Scholarship program

1.1. Aspiring students who's Declared annual income of parents (from all sources) is equal to or less than 448000 shall be eligible for 100% tuition fee waiver.

1.2. Aspiring students who's Declared annual income of parents (from all sources) is equal to or less than 720000 shall be eligible for 50% tuition fee waiver.

   c) Students who have secured admission on self-finance program are not eligible.
   d) Children of DUET staff are not eligible.

4.   Process of applying

Interested candidates are required to apply for the scholarship through the online application system at the time of applying for the admission in university.

5.   Supporting Documents to be submitted by the Applicants at the time of applying for scholarship.

(a) Copy of CNIC (Father, Mother/Guardian)
(b) Salary Slip/Income Certificate (Father, Mother/Guardian)
(c) Copies of Last six months Utility Bills (Electricity, Gas, Telephone, water)- if applicable
(d) Copy of Rent agreement in case of Rented House
(e) Copies of Last Fee Receipts of Applicant and siblings (If applicable)
(f) Copies of Medical Bills/expenditure related documents (if applicable)
(g) Passport size photograph of Applicant

6.   Process of Shortlisting

(a)   A scrutiny committee will be constituted by the Vice Chancellor who will look into the applicants for initial shortlisting.
(b)   Once the scrutiny is complete, a list will be prepared for the eligible and non-eligible students; Reasons for the rejection of an applicant along with comments will be clearly specified and maintained in the documentation.
(c)   Financial Assistance Department (FAD) shall maintain proper record of all applications received for the scholarship program.
(d)   Incomplete applications will not be acceptable for further processing.

7.   The constitution of Institutional Scholarship Award Committee (ISAC)

(a)   The Vice Chancellor shall chair the meeting.
(b)   Dean of the concerned faculty Member
(c)   Two senior faculty members (one shall be female faculty, Member to be appointed by the Vice Chancellor)
(d)   One member of syndicate Member
(e)   Two community representatives (one must be female) Member to be appointed by the Vice Chancellor
(f)   Director/In-charge Financial Assistance Department (FAD) secretary

NOTE: Tenure of member shall be three years. Quorum of ISAC shall be two-third. However, Presence of one member at 6.4 or 6.5 is mandatory.

8.   Power and function of the institutional scholarship Award Committee

(a)   To suggest and recommend the list of students as per approved criteria after interviews.
(b)   To approve scholars selected as per eligibility criteria of DUET Scholarship Program and any other issue on administration of the program.
(c)   To recommend physical verification of student where information is found dubious.

9. Process of Awarding of Scholarships

Based on the eligibility criteria, the interview, and site visits, (if any), the ISAC will draw up a provisional selection list of all eligible candidates. Merit list of selection will be based on

(a) Data score generated after reviewing mandatory proof of household income from all sources, household expenditures (such as utility bills, educational expenses of siblings, kitchen expenses etc.), type/ structure of house, number of physical assets, guardian status (alive/deceased) etc.

(b) Interview of the applicants to determine the veracity of the information provided in the application form. The panel may enquire about income versus expenditure pattern, availability of utility services, explanation of negative disposable income, value of Assets (home, agriculture land, bank balance, value of business etc.).

(c) After weighing all parameters, ISAC can recommend/not recommend an applicant for the scholarship (based upon the criteria defined by the HEC EHSAAS UNDERGRADUATE SCHOLARSHIP).

(d) Once the ISAC minutes are approved, the merit lists will be made public, and the selected students (referred to as Scholarship Awardees) shall be intimated formally by office of FAD about their provisional selection for the scholarship.

(e) Scholarship awardees will be asked to sign a deed of agreement (Annex B) on a stamp paper. Deed of agreement will be maintained by the office of FAD.

(f) The office of FAD shall issue the Final Award Letter. The number of scholarships awarded per year will be as per the decisions of the ISAC.

10. Continuation of the Scholarship

The continuation of a scholarship during the next academic year shall be subject to the following conditions, as verified by the FAD.

(a) The Scholarship Awardee has remained in good standing, i.e., he/she has been registered/ enrolled/ allowed to advance to the next semester as per the University's semester policy.

(b) The CGPA of the Scholarship Awardee is above the minimum threshold at 3.0/ 4.0. and class attendance of minimum 80%.

(c) In case the Scholarship Awardee fails to fulfill criteria defined in section 9 (b), his /her scholarship will be stopped until such time that his/she fulfill the criteria. On improvement of CGPA/achieving the attendance criteria, withheld scholarship funding of the Scholarship Awardee will be resumed. However, the dues of previous withheld semester (s) shall not be released.

(d) If Scholarship Awardee freezes semester for the specific duration, scholarship funds will be withheld for the said duration only. On joining the subsequent semester, funding will be resumed accordingly.

(e) Scholarship funding will only continue for the approved duration of degree programs. It will not cover expenses of any additional courses/ classes which may increase the specified duration of the degree programs.

11. Cancelation of the Scholarship

The scholarship will be cancelled if any of the following occurs:

(a) The Scholarship Awardee fails to maintain academic standards prescribed.
(b) If the Scholarship Awardee provides false information in the application form in order to secure the scholarship, regardless of when fact is discovered.
(c) If a Scholarship Awardee fails to maintain 80% class attendance without any reason.
(d) If a Scholarship Awardee extends the period of his/ her studies without prior approval of university.
(e) If a Scholarship Awardee is selected for any other scholarship scheme. In such case, the Scholarship Awardee will immediately inform the FAD, who may take such decision as is appropriate.
(f) If a Scholarship Awardee is convicted of a crime.
(g) If the Scholarship Awardee fails to obey or act in accordance with university directives with regard to academic behavior or performance.
(h) If the Scholarship Awardees found by the university authorities to be guilty of the violation of university rules, damage to university property, gross misbehaviour with staff or colleagues, or other actions leading to disciplinary action.

12. Conditions for Recovery

The scholarship funds will be recovered from the student by the university in following cases:

(a) If student concealed information about household income/assets etc, which is later disclosed by third party audits/physical verification.
(b) If student willfully withdraws from the designated degree program after getting scholarship funds of any amount.
(c) If student is found in getting another scholarship in parallel with DUET Scholarship Program.
(d) If student is found in any unlawful activities by the university authorities to be guilty of the violation of university rules, damage to university property etc. leading to disciplinary action.

13. DUET Employee Scholarship Program

(a) DUET employee admitted on seats reserved for the staff are also eligible for eligible for 50% tuition fee waiver from second year to fourth year based upon his academic performance. CGPA of candidate must be is above the minimum threshold at 3.0/ 4.0. and class attendance of minimum 80%.
(b) Children of University staff admitted on merit seats are also eligible for eligible for 75% tuition fee waiver from second year to fourth year based upon his academic performance. CGPA of candidate must be above the minimum threshold at 3.0/ 4.0. and class attendance of minimum 80%.
(c) Children includes real son/daughter and real brother/sister only.
(d) All earlier fee waiver for son/daughter (student admitted on seats reserved for the University Employees) approved by the syndicate shall stand cancelled.

14. Award of Three Merit Positions

(a) The university will grant merit positions to the top three students of each program based on their CGPA for the particular year, on an annual basis.

(b) The candidates having declared pass in first attempt shall be eligible for the award of merit positions. The students allowed by the University to avail the semester exchange program shall also be considered for the award of merit positions, provide such student pass all examinations in first attempt availed after resuming their studies after successfully completing their exchange. Program.

(c) The student(s) who are directly admitted in 2nd/ 3rd Year in the University on migration basis, shall also be considered for award of merit positions, if student(s) have cleared all the exempted subjects in first attempt in their University/ Institution.

(d) The first & second position holder shall receive full semester fee waiver. Whereas, the third position holder shall receive 75% semester fee waiver.

15. Complaints Redressal System

(a) To address different types of complaints, FAD will ensure a complaint redressal mechanism to cater to different queries related to the selection procedure. DAF of the University are required to display the email ID/ helpline number/portal link at different notice boards, website etc. for redressal of students' complaints.

18.2 Financial Assistance to Students

Students from humble backgrounds always remain under continuous financial pressure. The effects of the weak economy, due to the   Covid-19 pandemic, have further exacerbated the monetary miseries of many households. Assistantships that cover tuition fees and living costs could allow students to focus on their education rather than worry about the repercussions of the appalling economy. In addition, students could save their valuable time by keeping the focus on studies rather than working part-time. Scholarships could therefore ease   the financial burden on students and families.

The Vice Chancellor has taken the initiative of "DUET Scholarship Program" is a remarkable initiative designed to empower and support students in their pursuit of academic excellence. This scholarship, offered by Dawood University, aims to recognize, and reward outstanding and deserving students.

Dawood University of Engineering and Technology (DUET) believes in human development and equal opportunity for all. There are various scholarships, such as Ehsaas, HEC Need Based, PEF, DCET Alumni, IEP-SAC, Pakistan Bait-ul-Mal, available for needy and excellent students. The student scholarships are managed through the Financial Assistance Department (FAD). Various scholarships are announced by the FAD all year round.

The record of the needy students, especially orphans and those belonging to the underprivileged areas is maintained, and assistance is to such students on a priority basis. At DUET, we take great pride in nurturing our future generations with great compassion and empathy. Prospective students

and their families are assured that all students-regardless of financial status-receive the same treatment because one of DUET's core values is to provide quality education to all students, regardless of ability to pay.

18.3 Industrial Liaison and Internships

University-Industry Bridge provides impetus to the University to achieve Academia of relevance, which is mandatory by Academic regulatory authorities, such as Pakistan Engineering Council (PEC) which is signatory to the Washington Accord. In this regard, a fully functional separate directorate, named Directorate of Industrial Liaison & Alumni Affair (DILAA), run by a highly experienced, qualified, and agile team provide multi-dimensional support to DUET's students.

The DILAA arranges Internships for students during summer break in compliance with PEC mandatory requirements. The record of each student's internship is scrutinized by PEC during accreditation visits. Most of the desirous students in the recent past have successfully obtained internships with the assistance of DILAA.

DILAA works with industry to determine their operational problems and research needs. DILAA also works with different Educational Institutions to nurture the culture of out of box thinking in students by arranging guest speaker sessions, workshops, and enhancement of presentation skills.

DILAA also arranges mock interviews, to train the graduating students for the competitive market. DILAA arranges annual job fairs in which renowned engineering participating companies were provided the graduate professorial directory of DUET graduating students for hiring. The DILAA maintains a dynamic database of DUET'S alumni spread all over the globe and arranges frequent informal meetings of Alumni. The current and prospectus students are encouraged to visit DUET web site or stop by at DILAA to get additional information.

18.4 Career Counselling & Placement

Under the visionary leadership of the Vice Chancellor, the university prioritizes career counselling and placement initiatives. The Vice Chancellor actively fosters strategic collaborations with industry partners, providing students with invaluable guidance and opportunities, aligning academic excellence with successful career paths.

18.5   DUET Dispensary

To ensure the health and well-being of students the Vice Chancellor took an initiative for a dedicated Dispensary at the Campus. Staffed by qualified medical professionals, the dispensary provides essential healthcare services, first aid, and health consultations to foster a safe and thriving campus environment.
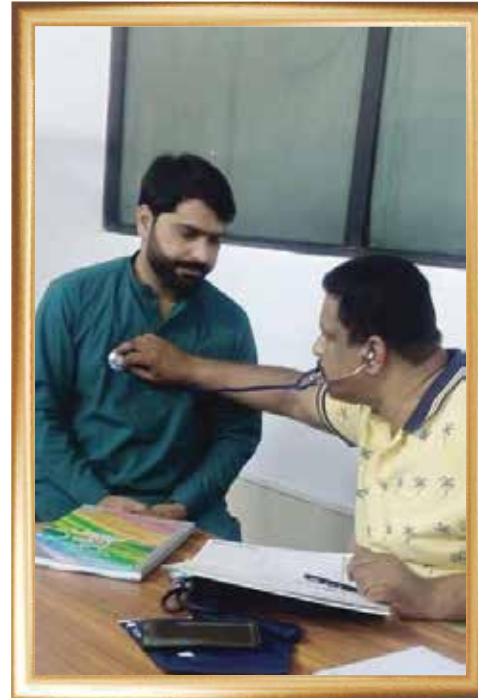
18.6   Students Cafeterias

Well-furnished cafeterias are available for all students where hygienic food and refreshment is available. The cafeterias offer a wide range of food and drink together with the opportunity to socialize with friends and colleagues. Realizing the growing enrolment of the students, the University has established a new canteen recently.

18.7 Auditorium

A state-of-the-art Auditorium is available for academic activities, where different sorts of academic activities are held such as Conferences, Seminars, Debate Competitions etc.


18.8 Girls Common Room

The furnished girl's common room that has sitting capacity of 50 girl students. The Girls Common Room serves as a vibrant and inclusive space where female students gather, fostering a sense of community and camaraderie. Designed to encourage collaboration and relaxation, it provides a supportive environment for personal growth and meaningful connections among our diverse student body.

18.9   Central Library

The university has an air-conditioned central library on the first floor. It stocks books and monographs on all subjects forming part of the university curriculum including multiple copies of textbooks and current journals. The central library has at present about 40,000 books on its shelves, which may be borrowed by the students. The university also has air-conditioned video conferencing facilities for holding seminars and lectures at National and International level. Additionally, teaching departments have their own seminar libraries and audio-visual facilities. All students admitted in university are eligible for library membership. A separate library facility exists at the Department of Architecture and Planning at Iqbal Campus.
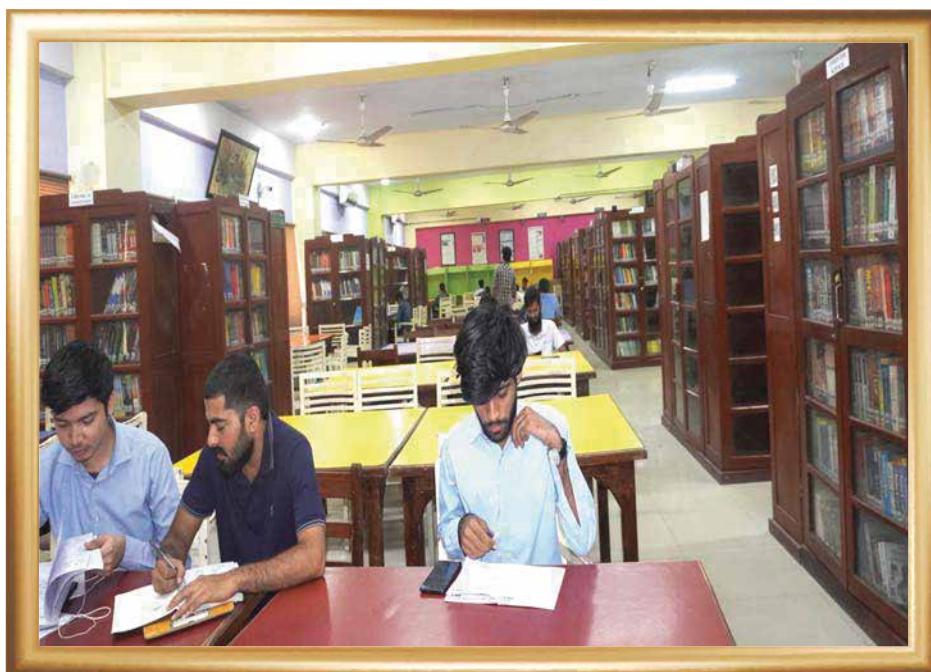
18.10 University ID Card

The students after being admitted to the University are issued Identity Cards by the Registrar Office/ Administrative Officer. It is necessary for the students to keep their valid Identity Cards with them while attending classes, traveling in the point buses, or staying on the campus.

18.11 Sports

Sports enthusiasts won't be disappointed by the activities on offer. Our Athletes/ Teams compete in a variety of competitions including those hosted by the Higher Education Commission (HEC), Islamabad. University has signed MoU with different sports club to provide their sports and physical   health care facilities to our students.

18.12 University Transport

The university offers a comprehensive transportation service, ensuring convenient and safe travel for students. With a fleet of modern vehicles and well-organized routes, the transportation system enhances accessibility and promotes a hassle-free commuting experience for all students.

18.13 Banking Facility

The campus features an ATM facility, offering students and staff convenient access to cash withdrawal and other banking services. This on-site ATM enhances financial accessibility, providing a practical solution for the immediate banking needs of the university community.

Academic Calendar for Session 2025-2028

TENTATIVE REVISED ACADEMIC CALENDAR FOR POSTGRADUATE PROGRAMS FOR THE YEAR 2025

FIRST SEMESTER OF YEAR 2025 7th SEMESTER OF BATCH 2022, 5th SEMESTER OF BATCH 2023, 3rd SEMESTER OF BATCH 2024 & 1st SEMESTER OF BATCH 2025		
Events	**Day (s)**	**Date (s)**
Registration	Monday	28th April 2025 to 4th May 2025
Commencement of Classes	Monday	5th May 2025
Mid Semester Exams	Monday to Friday	23rd June 2025 to 27th June 2025
Final Semester Exams	Monday to Friday	25th August 2025 to 29th August 2025
Semester Breaks	Monday to Saturday	1st Septmeber 2025 to 7th September 2025
Announcement of Result	Friday	5th September 2025
Holidays	Labour Day (Thursday)	1st May 2025
	Eid Ul Azha (Saturday - Monday)	7th June 2025 to 9th June 2025
	Yaum-e-Ashur (Saturday - Sunday)	5th July and 6th July 2025
	Independence Day of Pakistan (Thursday)	14th August 2025

SECOND SEMESTER OF YEAR 2025 8th SEMESTER OF BATCH 2022, 6th SEMESTER OF BATCH 2023, 4th SEMESTER OF BATCH 2024 & 2nd SEMESTER OF BATCH 2025		
Events	**Day (s)**	**Date (s)**
Registration	Monday to Sunday	1st September 2025 to 7th September 2025
Commencement of Classes	Monday	8th September 2025
Mid Semester Exams	Monday to Friday	27th October 2025 to 31st October 2025
Final Semester Exams	Monday to Friday	29th December 2025 to 2nd January 2026
Semester Breaks	Monday to Sunday	5th January 2026 to 25th January 2026
Announcement of Result	Friday	9th January 2026
Holidays	Eid Milad un Nabi (Thursday)	5th September 2025
	Allama Iqbal Day	9th November 2025
	Quaid-e-Azam Day / Christmas	25th December 2025

Academic Calendar for Session 2025-2028

SPRING 2026			
2nd , 4th , 6th and 8th SEMESTER OF B.E, BS., AND B ARCH, PROGRAMS AND 10th SEMESTER (B. ARCH. ONLY)			**7th, 5th, 3rd & 4th SEMESTER OF BATCH 2023, 24, 25, 26 OF MS & PHD**
Events	**Day (s)**	**Date (s)**	**Date (s)**
Registration	Monday	26th January 2026 to 7th February 2026	19th January 2026 to 25th Junary 2026
Commencement of Classes	Monday	26th January 2026	26th January 2026
Mid Semester Exams	Tuesday/Monday to Saturday	24th March 2026 to 28th March 2026	20th April 2026 to 24th April 2026
Student Week	Monday to Friday	18th May 2026 to 23rd May 2026	
Examination Preparation Break	Monday to Friday	25th May 2026 to 30th May 2026	22nd June 2026 to 28th June 2026
Final Semester Exams	Monday to Saturday	1st June 2026 to 13th June 2026	29th June 2026 to 3rd July 2026
Summer Break	Monday	15th June 2026 to 21st August 2026	6th July 2026 to 21st August 2026
Announcement of Result	Friday	26th June 2026	10th July 2026
Holidays	Kashmir Solidarity Day Martyrdom Anniversary of Zulfiqar Ali Bhutto Eid Ul Fitr Pakistan Day Eid ul Azha	5th February 2026 4th April 2026 23rd March 2026 1st May 2026 26th May 2026 to 28th May 2026	

SUMMER SEMESTER 2026			
ALL SEMESTER OF B.E. BS PROGRAMS, AND B. ARCH PROGRAMS			
Events	**Day (s)**	**Date (s)**	**Date (s)**
Registration	Monday	15th June 2026 to 19th June 2026	
Commencement of Classes	Monday	15th June 2026	
Mid Semester Exams	Monday to Saturday	13th July 2026 to 18th July 2026	
Final Semester Exams	Monday to Saturday	17th August 2026 to 22nd August 2026	
Announcement of Result	Monday	28th August 2026	
Holidays	Yaum-e-Ashur Independence Day of Pakistan Eid Milad-un-Nabi	25th & 26th June 2026 14th August 2026 25th August 2026	

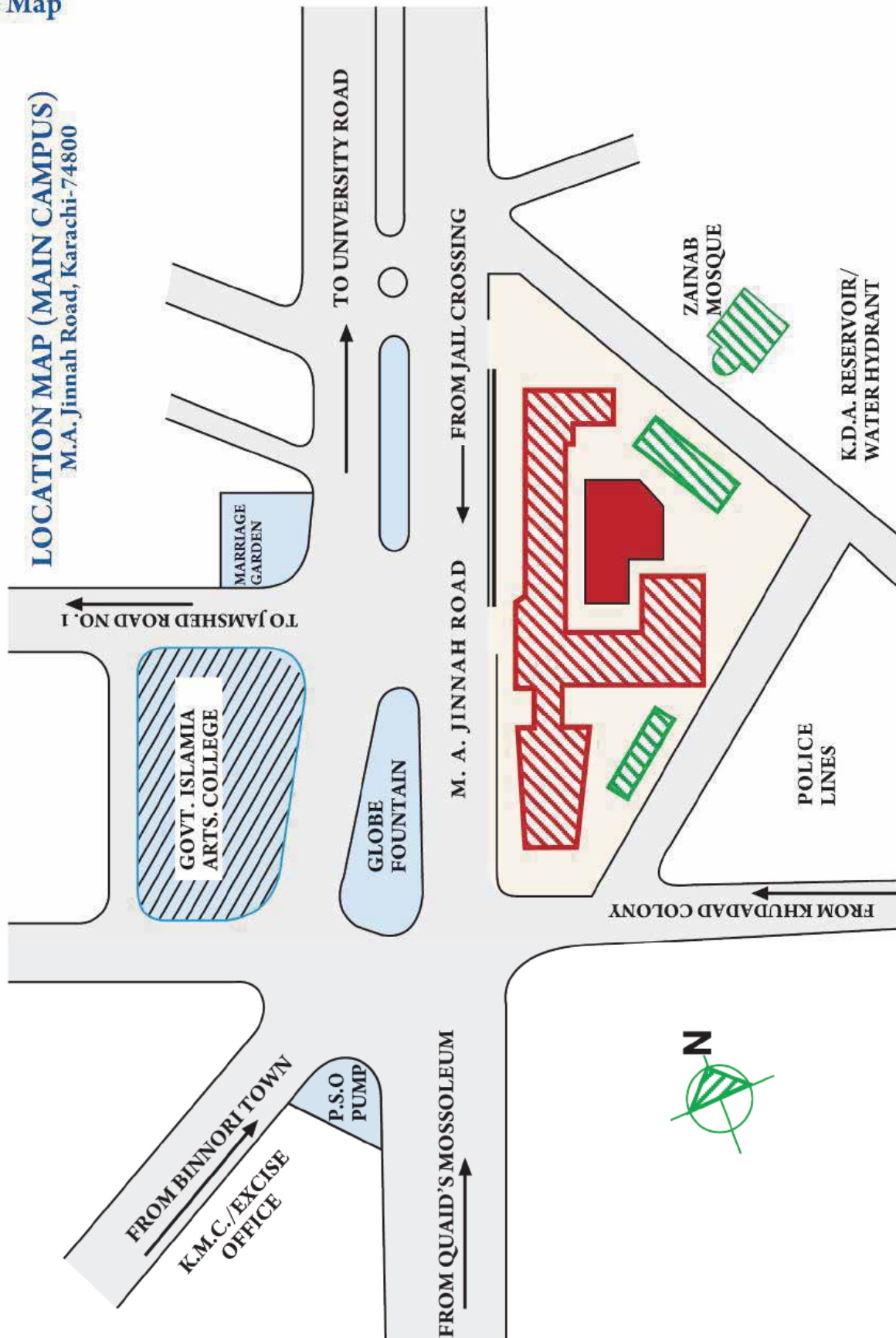| FALL 2026			
1st, 3rd, 5th and 7th SEMESTER OF B.E. BS PROGRAMS AND 9th SEMESTER (B. ARCH ONLY)			**8th, 6th, 4th & 2nd SEMESTER OF BATCH 2023, 24, 25, 26 OF MS & PHD**
Events	**Day (s)**	**Date (s)**	**Date (s)**
Registration	Monday	24th August 2026 to 4th September 2026	17th August 2026 to 23rd August 2026
Commencement of Classes	Monday	24th August 2026	24th August 2026
Mid Semester Exams	Monday to Saturday	12th October 2026 to 17th October 2026	12th October 2026 to 16th October 2026
Sports Week	Monday to Friday	14th December 2026 to 19th December 2026	-
Examination Preparation Break	Monday to Saturday	21st December 2026 to 26th December 2026	14th December 2026 to 20th December 2026
Final Semester Exams	Monday to Saturday	28th December 2026 to 9th January 2027	21st December 2026 to 25th December 2026
Summer Break	Winter Break	11th January 2027 to 23rd January 2027	28th December 2026 to 23rd January 2027
Announcement of Result	Friday	22nd January 2027	1st January 2027
Holidays	Allama Iqbal Day Quaid-e-Azam Birthday/ Christmas Day	9th November 2026 25th December 2026	

Academic Calendar for Session 2025-2028

SPRING 2027			
2nd, 4th, 6th and 8th SEMESTER OF B.E, BS., AND B ARCH, PROGRAMS AND 10th SEMESTER (B. ARCH. ONLY)			7th, 5th, 3rd & 4th SEMESTER OF BATCH 2023, 24, 25, 26 OF MS & PHD
Events	Day (s)	Date (s)	Date (s)
Registration	Monday	25th January 2027 to 7th Feburary 2027	18th January 2027 to 24th January 2027
Commencement of Classes	Monday	25th January 2027	25th January 2027
Mid Semester Exams	Monday to Saturday	15th March 2027 to 20th March 2027	19th April to 23rd April 2027
Student Week	Monday to Friday	19th May 2027 to 22nd May 2027	-
Examination Preparation Break	Monday to Friday	24th May to 29th May 2027	21st June 2027 to 26th June 2027
Final Semester Exams	Monday to Saturday	31st May 2027 to 12th June 2027	28th June 2027 to 2nd July 2027
Summer Break	Monday	14th June 2027 to 20th August 2027	5th July 2027 to 20th August 2027
Announcement of Result	Friday	25th June 2027	9th July 2027
Holidays	Kashmir Solidarity Day Eid Ul Fitr Pakistan Day Martzyrdom Anniversary of Zulfiqar Ali Bhutto Eid ul Azha	5th February 2027 10th March 2027 to 12th March 2027 23rd March 2027 4th April 2027 1st May 2027 16th May 2027 to 18th May 2027	

SUMMER SEMESTER 2027			
ALL SEMESTER OF B.E. BS PROGRAMS, AND B. ARCH PROGRAMS			
Events	Day (s)	Date (s)	Date (s)
Registration	Monday	14th June 2027 to 18th June 2027	
Commencement of Classes	Monday	14th June 2027	
Mid Semester Exams	Monday to Saturday	12th July 2027 to 17th July 2027	
Final Semester Exams	Monday to Saturday	16th August 2027 to 21st August 2027	
Announcement of Result	Monday	27th August 2027	
Holidays	Yaum-e-Ashur Independence Day of Pakistan Eid Milad-un-Nabi	14th June 2027 to 15th June 2027 14th August 2027 15th August 2027	

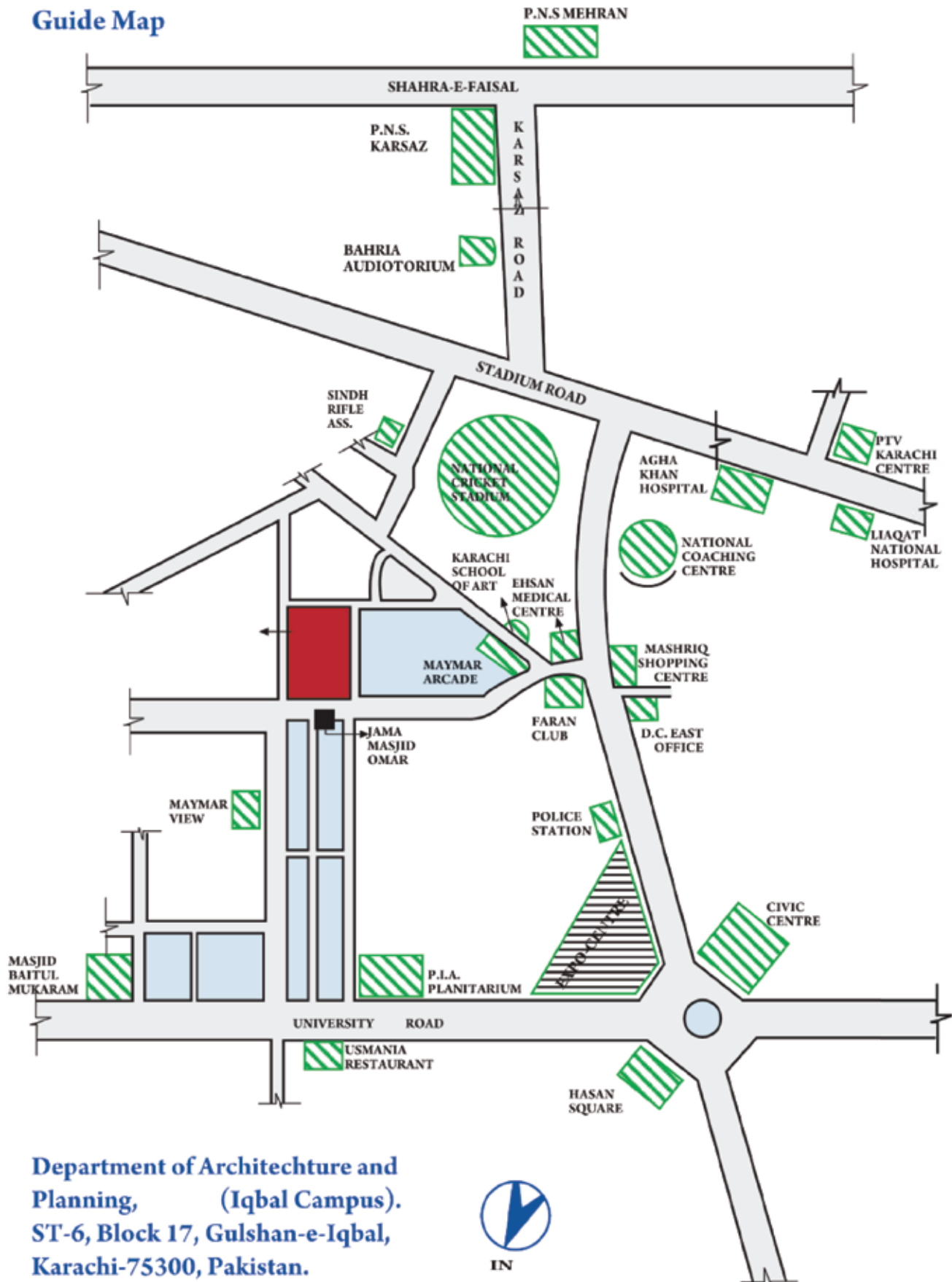| FALL 2027			
1st, 3rd, 5th and 7th SEMESTER OF B.E. BS PROGRAMS AND 9th SEMESTER (B. ARCH ONLY)			8th, 6th, 4th & 2nd SEMESTER OF BATCH 2023, 24, 25, 26 OF MS & PHD
Events	Day (s)	Date (s)	Date (s)
Registration	Monday	23rd August 2027 to 3rd September 2027	16th August 2027 to 22nd August 2027
Commencement of Classes	Monday	23rd September 2027	23rd August
Mid Semester Exams	Monday to Saturday	11th October 2027 to 16th October 2027	11 October 2027 to 15th October 2027
Sports Week	Monday to Friday	13rd December 2027 to 17th December 2027	-
Examination Preparation Break	Monday to Saturday	20th December 2027 to 25th December 2027	13th December 2027 to 19th December 2027
Final Semester Exams	Monday to Saturday	27th December 2027 to 8th January 2028	20th December 2027 to 24th December 2027
Summer Break	Winter Break	10th January 2028 to 21st January 2028	26th December 2027
Announcement of Result	Friday	21st January 2028	31st December 2027
Holidays	Allama Iqbal Day Quaid-e-Azam Birthday/ Christmas Day	9th November 2027 25th December 2027	

Academic Calendar for Session 2025-2028

SPRING 2028			
2nd , 4th , 6th and 8th SEMESTER OF B.E, BS., AND B ARCH, PROGRAMS AND 10th SEMESTER (B. ARCH. ONLY)			**7th, 5th, 3rd & 4th SEMESTER OF BATCH 2024, 24, 25, 26 OF MS & PHD**
Events	**Day (s)**	**Date (s)**	**Date (s)**
Registration	Monday	24th January 2028 to 4th February 2028	24th January 2028 to 30th January 2028
Commencement of Classes	Monday	24th January 2028	29th February 2028
Mid Semester Exams	Monday to Saturday	20th March 2028 to 25th March 2028	17th April 2028 to 21st April 2028
Student Week	Monday to Friday	15th May to 19th May 2028	-
Examination Preparation Break	Monday to Friday	22nd May 2028 to 26th May 2028	19th June 2028 to 25th June 2028
Final Semester Exams	Monday to Saturday	29th May 2028 to 10th June 2028	26th June 2028 to 30th June
Summer Break	Monday	12th June 2028 to 18th August 2028	1st July 2028 to 18th August 2028
Announcement of Result	Friday	23rd June 2028	7th July 2028
Holidays	Kashmir Day Eid Ul Fitr Pakistan Day Martzyrdom Anniversary of Zulfiqar Ali Bhutto Labour Day Eid ul Azha	5th February 2028 26th February 2028 to 28th February 2028 23rd March 2028 4th April 2028 1st May 2028 4th May 2028 to 6th May 2025	

SUMMER SEMESTER 2028			
ALL SEMESTER OF B.E. BS PROGRAMS, AND B. ARCH PROGRAMS			
Events	**Day (s)**	**Date (s)**	**Date (s)**
Registration	Monday	12th June 2028 to 16th June 2028	
Commencement of Classes	Monday	12th June 2028	
Mid Semester Exams	Monday to Saturday	10th July 2028 to 15th July 2028	
Final Semester Exams	Monday to Saturday	15th August 2028	
Announcement of Result	Monday	25th August 2028	
Holidays	Yaum-e-Ashur Independence Day of Pakistan Eid Milad-un-Nabi	2nd and 3rd June 2028 14th August 2028 3rd August 2028	

FALL 2028			
1st, 3rd, 5th and 7th SEMESTER OF B.E. BS PROGRAMS AND 9th SEMESTER (B. ARCH ONLY)			**8th, 6th, 4th & 2nd SEMESTER OF BATCH 2023, 24, 25, 26 OF MS & PHD**
Events	**Day (s)**	**Date (s)**	**Date (s)**
Registration	Monday	21st August 2028 to 1st September 2025	15th August 2028 to 20th August 2028
Commencement of Classes	Monday	21st September 2025	21st August 2028
Mid Semester Exams	Monday to Saturday	9th October 2028 to 14th October 2028	9th October 2028 to 13th October 2028
Sports Week	Monday to Friday	11th December 2028 to 15th December 2028	-
Examination Preparation Break	Monday to Saturday	18th December 2028 to 22nd December 2028	11th December 2028 to 17th December 2028
Final Semester Exams	Monday to Saturday	25th December 2028 to 6th January 2029	18th December 2028 to 22nd December 2028
Summer Break	Winter Break	8th January to 19th January 2029	24th December 2028 to 19th January 2029
Announcement of Result	Friday	19th January 2029	29th December 2028
Holidays	Allama Iqbal Day Quaid-e-Azam Birthday/ Christmas Day	9th November 2028 25th December 2028	

Guide Map

LOCATION MAP (MAIN CAMPUS)
M.A. Jinnah Road, Karachi-74800

TO UNIVERSITY ROAD

FROM JAIL CROSSING

ZAINAB MOSQUE

K.D.A. RESERVOIR/ WATER HYDRANT

MARRIAGE GARDEN

TO JAMSHED ROAD NO. 1

GOVT. ISLAMIA ARTS. COLLEGE

GLOBE FOUNTAIN

M. A. JINNAH ROAD

POLICE LINES

FROM KHUDADAD COLONY

N

FROM BINNORI TOWN

P.S.O PUMP

K.M.C./EXCISE OFFICE

FROM QUAID'S MOSSOLEUM

Guide Map

Department of Architechture and Planning,   (Iqbal Campus). ST-6, Block 17, Gulshan-e-Iqbal, Karachi-75300, Pakistan.

IN

Dawood University
of Engineering & Technology, Karachi

Main Campus

Dawood University of Engineering and Technology
M.A. Jinnah Road, Karachi-74800, Pakistan
Tel: 99231195-98, 99230307, Fax: 92-21-99230710

Iqbal Campus

Dawood University of Engineering and Technology
ST-6, Block 17, Gulshan-e-Iqbal, Karachi-75300,
Pakistan Tel: 99243874, 99243866

CEMET

Centre for Entrpreneurship Management & Emerging
Technologes Near Govt Atta Hussain Shah Drgree
College, NHS, Sukkur, Sindh

DUET Gulberg Town

Faculty of Information & Computing Sciences
FB Area Dastagir, Block-9 Gulberg Town, Karachi