CONTENTS

CONTENTS

Mr. Asif Ali Zardari
Chancellor

Tanvir Ashraf Kaira
Pro-Chancellor

Vice Chancellor's Message

Engr. Prof. Dr. Akhtar Ali Malik
Vice Chancellor

It is with great pleasure and enthusiasm that I extend a warm welcome to our prospective students. As the vice chancellor, I am honored to represent an institute renowned for its commitment to academic excellence, innovation, and personal growth. We are famous for being the only public sector degree awarding institute in the country to sustain on its own financial resources for decades. In addition, the institute has also gradually expanded the infrastructure significantly without any external monetary support.

Our team is composed of dedicated and highly qualified faculty members who are experts in their fields with ample relevant experience. Through its diverse undergraduate and postgraduate programs spanning computer science, artificial intellgence, allied health sciences, engineering, technology, business administration, fashion design, architecture, basic sciences and criminology, the institute is playing a pivotal role in disseminating quality education in the Southern Punjab region.

We offer state-of-the-art facilities, cutting-edge research centers, and extensive library resources that provide students with the tools necessary to excel academically. Furthermore, the purpose built campus and the infrastructure provides endless opportunities to nurture the career path of our students. Beyond the classroom, students are encouraged to take advantage of our strong network of industry partnerships, internships, and career development programs.

I extend a heartful welcome to you and eagerly await the opportunity to witness your academic growth and achievements.

ADMINISTRATION & ACADEMIC SUPPORT

VICE CHANCELLOR

Engr. Prof. Dr. Akhtar Ali Malik   (061) 9220044
Vice Chancellor

Registrar

Engr. Nasrullah Khan Babar   (061) 9220012-16
                               Ext: 4444

Treasurer

Muhammad Maghfoor Anwar   Ext: 5555

Controller of Examinations

Engr. Rasool Ahmad   Ext: 2249

Deputy Controller of Examinations

Engr. Sadaqat Ali   Ext: 2349

Examination Department

Syed Zeeshan Saleem   Ext: 2244

Admission Committee

Engr. Rasool Ahmad	0333-9942186	Ext: 2372
Dr. Kamran Liaqat Bhatti	0307-7315995	Ext: 2245
Mr. Muhammad Arshad	0303-9774699	Ext: 2278
Mr. Qamar Hussain Bhatti	0303-5757096	Ext: 2223

Student Affairs

Engr. Zeeshan Raza	Ext: 2262
Engr. Serosh Karim Noon	Ext: 2341
Engr. Tahir Mahmood Bhatti	Ext: 2331

Head, Deptt. of Chemical Engineering

Engr. Dr. Sadiq Hussain   Ext: 2214
                            0305-8757597

Head, Deptt. of Electrical Engineering

Engr. Dr. Kamran Liaqat Bhatti   Ext: 2245
                                   0307-7315995

Head, Deptt. of Computer Science

Dr. Naeem Aslam   Ext: 2258
                    0321-6300483

Head, Deptt. of Mechanical Engineering

Engr. Dr. Muhammad Zulkarnain Abbas   Ext: 2422
                                        0300-6982225

Head, Deptt. of Civil Engineering

Engr. Dr. Syed Adnan Raheel Shah   Ext: 2405
                                     0300-7914248

Head, Deptt. of Petroleum & Gas Engineering

Engr. Dr. Sheraz Ahmad   Ext: 2342
                           0333-6100674

Head, Deptt. of Architecture

Ar. Syeda Mehwish Zahra   Ext: 2318
                            0300-4961613

Head, Deptt. of Business Administration

Dr. Shahzadi Sattar   Ext: 2363
                        0300-7305951

Head, Deptt. of Environmental Science

Ms. Robia Arshad   0307-2165737

Head, Deptt. of Physics

Dr. Suleman Khan   Ext: 2295
                     0311-150050

Head, Deptt. of Chemistry

Ms. Shahida Rehman   Ext: 2354
                       0332-1122557

Head, Deptt. of Fashion Design

Ms. Nazish Huma Khan   0321-6337744

Chairman Hall Council

Dr. Naeem Aslam   Ext: 2258
                    0321-6300483

Warden (Boys)

Engr. Imran Iqbal   Ext: 2295
                      0300-9635529

Deputy Warden (Girls)

Engr. Dr. Sana Saeed   Ext: 2338

Asstt. Warden (Girls)

Ms. Fakhr un Nisa   Ext:2367

Document Section

Mr. Nazar Abbas   0300-7347852

IT Section

Mr. Ahsan Shah	Ext: 2309
Engr. Ali Raza	Ext: 2454
Engr. Junaid Tahir	Ext: 2454

NFC INSTITUTE OF ENGINEERING & TECHNOLOGY
FEDERAL DEGREE AWARDING INSTITUTE

NFC IET
MULTAN-PAKISTAN

Vice Chancellor Secretariat

Prospectus
2024

GENERAL

- **History of IET**
- **Academic Programmes**
- **Academic Setup**

www.nfciet.edu.pk

History

NFC-IET was established in 1985 to meet the technological training needs of production units of National Fertilizer Corporation of Pakistan in liaison with the industrial units of NFC with the collaboration of COSMO, Japan. Initially it trained managers, engineers, supervisors, operators and technicians through multi-dimensional programmes attuned to fertilizer and chemical process industry. The genesis of the Institute can be traced back to the early 90's when Dr. Saeed Ahmad Khan (late) emerged the idea that a centre of excellence in engineering and technology ought to be established in this region since there was no engineering institute from Lahore to Nawabshah, Sindh and the students hailing from these areas had to face huge difficulties to get admission in engineering universities as well as to pursue their education. The activities of the institute were diversified in 1994 in line with the education policy of Government of Pakistan and it was upgraded to the first dedicated engineering institute in Southern Punjab with engineering degree programmes offered in affiliation with Bahauddin Zakariya University, Multan. The under-graduate Engineering programme in NFC-IET was introduced in 1994 when a batch of 40 students was admitted in Chemical Engineering discipline. Since then, IET never looked back and grew with every passing year. In 2001, two new disciplines Electronic Engineering and Computer Systems Engineering were added. A four year B.S. Programme in Computer Science was introduced in 2008. The institution started a four year BS programme in Environmental Science in 2011.

In 2012, NFC-IET was awarded the charter of Federal Degree awarding Institute and Prof. Dr. Malik Akhtar Ali Kalrou was appointed as its first Vice Chancellor. Under the dynamic leadership of Prof. Dr. Malik Akhtar Ali Kalrou, NFC-IET is galloping at a rapid pace having launched new programmes including Mechanical Engineering, Civil Engineering, Architecture Design, BBA in 2013 and BS Engineering Technologies, in 2014 and B.Sc. Petroleum & Gas Engineering in 2015. The Institution has started Environmental Engineering and Energy System Engineering in 2017 and MS Programmes in Electrical Engineering & Chemical Engineering in 2016, and MS Computer Science in 2017. In 2020, four new programmes, including three post graduate programs were launched. In 2024, BS Artificial Intelligence and BS Fine Arts are launched.

All our Engineering programmes have been accredited by Pakistan Engineering Council (PEC), the apex body to regulate engineering education in the country. Over the years, the institute has produced more than 2800 bright, motivated graduates employed at some of the most respectable firms all over the world. We are proud that our graduates are not only strengthening the economy of Pakistan but also earning great respect for the institute. The practical engineering education facilities which are available in the Institute, such as Miniature Plant provide added benefits to students in learning actual plant operation, process control and plant optimization. These facilities are in no parallel with other engineering institutions/ universities of Pakistan. Another achievement of our institute in the field of engineering and technology is the establishment of Coal Research Centre which is a state of the art lab. The Coal Research Centre, established at a cost of Rs.80 Million, caters for coal gasification and combustion.

In today's competitive marketplace, NFC-IET is not only envisaged to grow as a modern centre of excellence in engineering and technology but also take heed in provided its students with industrial and science exposure since we strongly believe that science and engineering linkage between academic institutions, industry and elsewhere plays a critical role in raising our standard of living, quality of education, creating jobs and improving right knowledge, skills and attitude. We also believe in the harmony of academic and personal growth. Our societies have been playing their role in providing the students with various opportunities to indulge in their aesthetic interests and experience working in a professional environment. Moreover, these societies instil in their members the priceless qualities of teamwork and leadership.

Vision:

"NFC-IET committed to provide quality education and skills by providing conducive environment while maintaining self sustainability."

Mission:

"To pursue incorporation of academic evaluation standards in all strategic planning, policies and efficient management of financial resources at the Institute."

Goals:

➢ To produce graduates of market demand and social competence.
➢ Sustenance of Institute's employees

- confidence.
- ➢ Promotion of individual faculty research profile.
- ➢ Facilitation of international faculty and students' academics and R&D collaboration.
- ➢ Self assurance and compliance to all concerned academic regulatory bodies.
- ➢ To maximize resource mobilization of the Institute.

In present techno-driven world, institutions of engineering and technology education have got prime importance for a country to achieve distinguished position among the advanced nations. Investments on producing high tech professionals and experts can guarantee in transforming traditional businesses of a country to a knowledge based economy which is accredited as an effective measure of prosperity of a nation. NFC-IET is also serving for the same cause offering higher education in multi engineering and science disciplines to the aspiring youth of Pakistan. The Institute aims at producing such professionals by setting up a strong base of engineering education and research. It strives to produce graduates who can upgrade the existing technological enterprise and in whom professional excellence is inseparable from a commitment to the national ideals.

Location, Area and Locality

The Institute is situated in Multan, a city located in the orbit of world known as Indus civilization and is amongst the few ancient cities of Pakistan. Multan's history of religious-political activities is almost five thousand years old. Multan, once famous for "Sun-Worship" in the early centuries of Christian era was introduced to a completely new set of conquerors. The city turned into a great centre of Suhrwardia Silsillah established under the guidance of Sheikh Bahauddin Zakariya.

Exquisite relics of that era are the treasured possessions of The Khanqah (Shrine) of Shah Rukn-e-Aalam, a masterpiece of architecture which became the identity of Multan. During this period, immigrants from various cultural and intellectual centres of central Asia and Iran came to Multan. Today's city of Multan reflects a complete blend of modern, planned metropolitan systems and old

civilization.

The Institute is located on Khanewal Road in close proximity to Pak Arab Fertilizers Ltd., which is one of the biggest chemical process complexes in the country, and provides a strong technical backup to the Institute. Stretched over a land of 320 canals, NFC-IET is housed in a number of buildings having graceful exterior and elegant interiors with all the necessary amenities for its users. The location of the Institute offers many advantages. Perhaps the most important advantage is the invaluable opportunities it offers for establishing an interaction between industry and institute.

Academic Programmes

The Institute offers following undergraduate programmes:

1. B.Sc. Chemical Engineering
2. B.Sc. Electrical (Computer Systems) Engg.
   B.Sc. Electrical (Power) Engineering
   B.Sc. Electrical (Electronics) Engineering
3. B.Sc. Mechanical Engineering
4. B.Sc. Civil Engineering
5. B.Sc. Petroleum & Gas Engineering
6. B. Architecture
9. BS Computer Science
10. BS Software Engineering
11. BBA
12. BS Bio-Medical Engineering Technology

13. B.Des. Fashion Design
14. BS Criminology
15. BS Environmental Science
16. BS Chemistry
17. BS Physics
18. BS Food Science and Technology
19. BS Artificial Intelligence
20. BS Fine Arts

The Institute offers following postgraduate programmes;

1. MS Electrical Engineering
2. MS Chemical Engineering
3. MS Computer Science
4. MS Mechanical Engineering
5. MS Civil Engineering
6. MBA

Curriculum for the degree in each discipline is designed to provide in-depth knowledge of engineering & technology to the graduates, develop their thinking ability in a manner that they become competent professionals with additional attributes of creative vision, innovative approach and managerial skills. The curricula are in line with PEC and HEC guidelines.

Academic Setup

Each semester shall be of five months duration with 16 weeks for teaching, and two weeks each for conduct of examination and vacations. The medium of instruction is English.

The Faculty

The existing teaching staff is highly qualified and rich in industrial experience and technical skills. IET is perhaps one of the few institutions in Pakistan, with a teaching staff of such a vast industrial experience. The faculty consists of professionals in the fields of Chemical, Mechanical, Civil, Electrical, Electronic, Instrumentation Computer Engineering, and Science and Architecture Design. The faculty includes 36 Ph.Ds in Engineering and Basic Sciences and over 94 Masters Degree holders. Under the faculty development plan of the Institute, as many as eight faculty members have gone abroad for Ph.D./M.S. Programme and an equal number is pursuing Ph.D./M.S. within the country.

The Institute also holds the services of competent professionals, senior academicians and experienced teachers as panel members who frequently visit the Institute during the academic year.

Outcome-based Education System

Outcome-based education is a model of education that rejects the traditional focus on what the Institute provides to students, in favor of making students demonstrate that they "know and are able to do" whatever the required outcomes are.

OBE reforms emphasize setting clear standards for observable, measureable outcomes. Nothing about OBE demands the adoption of any specific outcome. For example, many countries write their OBE standards so that they focus strictly on mathematics, language, science, and history, without ever referring to attitudes, social skills, or moral values.

The key features which may be used to judge if a system has implemented an outcomes-based

- Creation of a curriculum framework that outlines specific, measureable outcomes. The standards included in the frameworks are usually chosen through the area's normal political process. A commitment not only to provide an opportunity of education, but to require learning outcomes for advancement. Promotion to the next grade or other rewards is granted upon achievement of the standards, while extra classes, repeating the year or other consequences entail upon those who do not meet the standards.

- Standards-based assessments that determines whether students have achieved the stated standard. Assessments may take any form, so long as the assessments actually measure whether the student knows the required information or can perform the required task.
- NFC-IET Multan adopted OBE System for Engineering Technologies programs according to the requirement of Pakistan Engineering Council and National Technology Council.

Benefits of OBE

Clarity

The focus on outcomes creates a clear expectation of what needs to be accomplished by the end of the course. Students will understand what is expected of them and teachers will know what they need to teach during the course. Clarity is important over years of schooling and when team teaching is involved. Each team member, or year in school, will have a clear understanding of what needs to be accomplished in

each class, or at each level, allowing students to progress. Those designing and planning the curriculum are expected to work backwards once an outcome has been decided upon; they must determine what knowledge and skills will be required to reach the outcome.

Flexibility

With a clear sense of what needs to be accomplished, instructors will be able to structure their lessons around the student's needs. OBE does not specify a specific method of instruction, leaving instructors free to teach their students using any method. Instructors will also be able to recognize diversity among students by using various teaching and assessment techniques during their class. OBE is meant to be a student-centered learning model. Teachers are meant to guide and help the students understand the material in any way necessary, study guides, and group work are some of the methods instructors can use to facilitate students learning.

Comparison

OBE can be compared across different institutions. On an individual level, institutions can look at what outcomes a student has achieved to decide what level the student would be at within a new institution. On an institutional level, institutions can compare themselves, by checking to see what outcomes they have in common, and find places where they may need

improvement, based on the achievement of outcomes at other institutions. The ability to compare easily across institutions allows students to move between institutions with relative ease. The institutions can compare outcomes to determine what credits to award the student. The clearly articulated outcomes should allow institutions to assess the student's achievements rapidly, leading to increased movement of students. These outcomes also work for school to work transitions. A potential employer can look at records of the potential employees to determine what outcomes they have achieved. They can then determine if the potential employee has the skills necessary for the job.

Involvement

Student involvement in the classroom is a key part of OBE. Students are expected to do their own learning, so that they gain a full understanding of the material. Increased student involvement allows students to feel responsible for their own learning, and they should learn more through this individual learning. Other aspects of involvement are parental and community, through developing curriculum, or making changes to it. OBE outcomes are meant to be decided upon within a school system, or at a local level. Parents and community members are asked to given input in order to uphold the standards of education within a community.

Facilities & Services

- Computing & Internet
- Libraries
- Students' Accommodation
- Vice Chancellor Secretariat
- Guest House
- Sports Facilities
- Laboratories
- Mosque
- FM Radio Broadcasting
- Transport & Parking Facilities
- Metro Bus Service

The Institute is spread over 40 acres of land. NFC IET include Dr. Akhtar Ali Kalrou Block, Old & new Chemical Engineering Blocks, Mechanical Engineering Block, Civil Engineering Block, Bio-Medical Block, Architecture Block and Electrical Engineering Block. In addition, the Institute has a Vice Chancellor Secretariat, Training Block and Central Workshop in the Academic premises. These buildings, apart from the class rooms and labs, include three libraries - one each for Chemical Engineering, Electrical Engineering & Basic Sciences, three Seminar Halls and six Committee Rooms. The Institute is housed in a number of buildings, which have a graceful exterior and an elegant interior with all the necessary amenities and conveniences for its users. The academic blocks have fully furnished, air-conditioned class rooms, lecture theaters, laboratories equipped with latest equipment and Instruments, Workshop, Faculty Rooms, Seminar Halls, Committee Rooms and a Library.

Computing & Internet Facilities

The Institute has high speed network setup for the faculty members and students who have an easy access to the internet services like web surfing, file transfer, chat and e-mail. The computer and Simulation Labs of Chemical Engineering Department have 70 computers while in the Electrical Engineering Department, in addition to different Lab Computers, there are 150 Core-i7 computers in Labs for the purpose of computing and internet facility, in particular Computer Science Department has five state of the art computer labs and computer equipped class rooms.

Libraries

A grand new building for Central Library completed recently. At present, we have three libraries. One of the libraries of the Institute is situated in Electrical Engineering Block. The main hall is well furnished, air-conditioned and has independent study cabins. It has textbooks, reference books, Science & Engineering Encyclopedias, Training Manuals, Technical Literature, Magazine and journals to meet the needs of the faculty and students. The library at the moment has over twenty five thousand books which are under use for study, training and research purpose. In addition, latest and contemporary issues of international journals and magazines of the relevant disciplines are also available for the pursuance of research activities.

The library has access to on-line digital library through HEC's PERN System, which is the flagship program of HEC. The Audio-Visual section of the library has over one hundred videocassettes on diverse topics like operation of different machines, pumps, compressors etc. maintenance of these

machines and other technical and general engineering issues. A separate library for Chemical Engineering students has been created in the old Chemical Engineering Block and for Civil Engineering, Mechanical Engineering, Architecture, & Environmental Engineering programmes, a library is established in Dr. Akhtar Ali Kalrou Block. These libraries have similar facilities as that of Electrical Engineering Block.

Students' Accommodation

Two boys' hostels were constructed in 2007 and 2015 having a capacity of 440 students each. The hostels are fully equipped with all residential and sports facilities required for male students. The hostel mess serves quality food at approved rates and the canteen offers break-fast, snacks, refreshments and remains open till late night.

Girls' Accommodation

The girls' hostel can accommodate over 100 female students. The hostel is fully equipped with all residential and sports facilities required for female students. In addition to furnished kitchen, mess facility is also available on membership basis.

Vice Chancellor Secretariat

The Vice Chancellor Secretariat of the institute includes offices of the Vice Chancellor, Registrar, Controller of Examinations, Admission, Administration, Finance and other allied offices.

Guest House

The first building which was constructed right at the inception of the Institute was the Guest house to accommodate guests for their short stay at the campus. It is lavishly furnished, has ten bed rooms and is currently used for visitors stay as well as to serve external examiners.

Sports

Extensive indoor and outdoor sports facilities are available within and around the Institute. A Gymnasium, Badminton courts and a football ground/cricket field are available in the Institute. Construction of new sports complex, having Basket ball, Lawn Tennis, Squash Courts and a Swimming pool, will start soon.

Laboratories

The Institute has a number of laboratories having latest equipment and a state of the art miniature plant. Fifteen new laboratories have been added to the laboratory facilities of the Institute to cater the needs of the engineering students. These lab facilities meet the international standards and are highly ranked among the institutions offering degree in engineering disciplines. Construction work for the upgradation of existing labs and addition of new ones is underway. The labs will not only be utilized at under-graduate level but also at post-graduate level for research and studies. Detailed list of the Labs with major equipment is given on subsequent pages.

Mosque

A mosque has been constructed near the boys' hostels to facilitate the students to offer their regular prayers.

NFC-IET Goes Live (FM Transmission)

NFC-IET has taken another congenial initiative by incorporating with PILAC (Punjab Institute of Language, Art & Culture) and established a specialized subject "Punjab Rung FM 99.4" radio station in the premises of the Institute. This incitingly zealous and spirited project aims for the development of the Education and culture of Southern Punjab.

FM 99.4 is benefitting NFC-IET with two hours exclusive On-Air time daily and free of cost for the presentation of education, and research to promote.

An independent floor is entrusted to FM in the Architecture department where FM owns an On-Air studio, Production Studio, Control Room, and a very well equipped digital recording and editing system.

The test transmission has already started from 24th May 2021. The initial coverage area is more than 200 KM all around Multan.

PARKING PLAZA

The expansion of the Institution with numerous new departments, and greater enrollment of students, had made the parking place rather insufficient. The issue has been addressed and the innovative and the most awaiting facility of multi-story parking plaza has finally been built and functional at the present moment in the Institute.

It is a 3-story building consists of a basement, ground floor, and 1st floor covering 56000 sq feet with segregated entrances having the parking space of 300 Bikes and 150 Cars and still further floors can be constructed according to future requirements.

The students can get access to park their vehicles safely by having the parking-tokens while the faculty is allocated with exclusive stickers for parking.

This marvelous project was inaugurated by the reverend Vice-Chancellor NFC-IET Prof. Dr. Malik Akhtar Ali Kalrou in a ceremony. During the program, the Vice Chancellor recognized all the hard work to make this plan a success. In his speech, he further elucidated that the parking problem had been becoming a much more serious concern for

NFC-IET. The Institute construe the issue resulted in another memorable accomplishment credited to the Institute.

Solar Power System:
In order to avoid load shedding and getting green energy, NFC-IET became first Institute to install Solar Power System of 500 kw. NFC-IET is the first Institute of Punjab who get Generation Licence and it will give extra energy to MEPCO through Net Meter with the vision of Vice Chancellor.

Dr. Kamran Liaqat Bhatti, Project Director, completed the Solar Power System Project in record time of two months from the date of award of work.
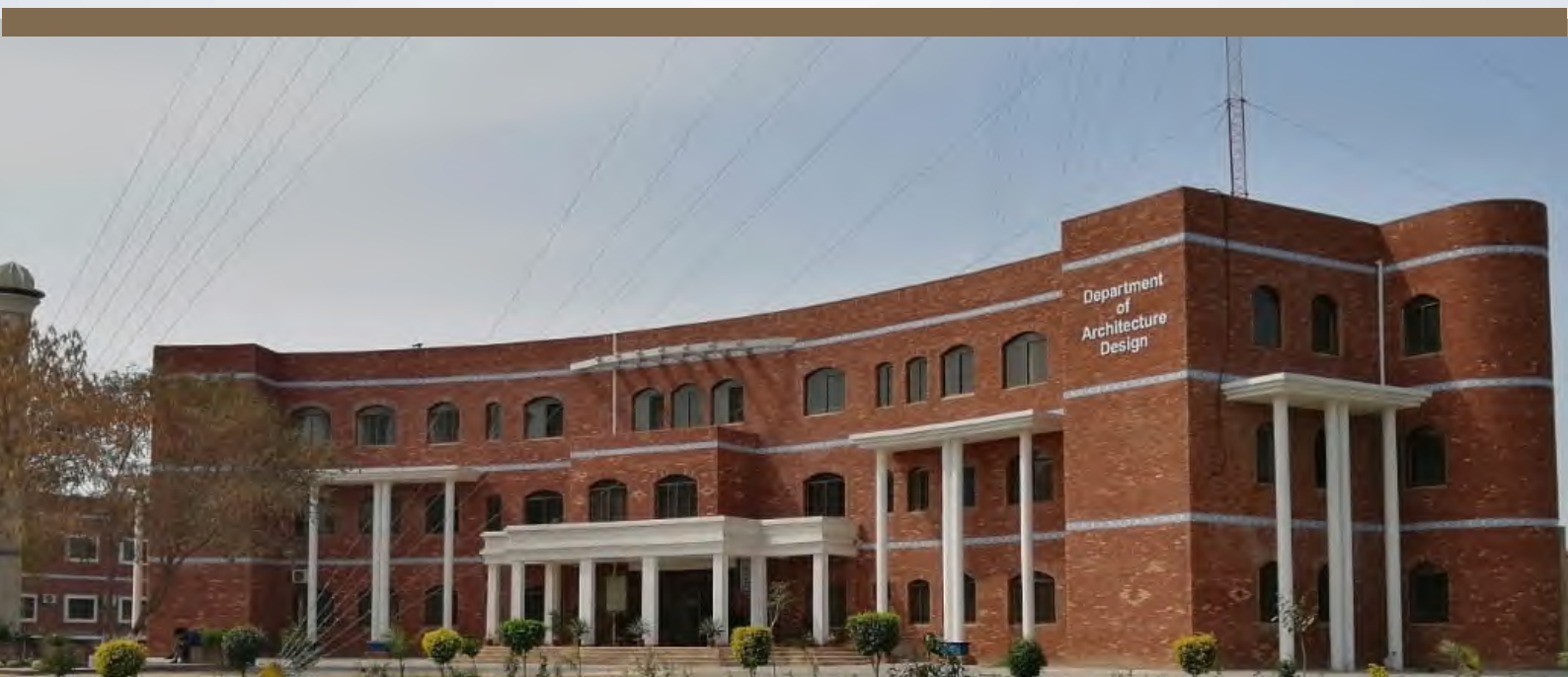
DEPARTMENT OF
Chemical
Engineering

Prospectus
2024

www.nfciet.edu.pk

Engr. Dr. Sadiq Hussain
Ph.D. (Chem. Engg.)
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.), P.E.
32 years' experience in chemical industry, research & academia
sadiqhusain@nfciet.edu.pk

Head Chemical Engineering Department

Engr. Tafzeel Khaliq
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.) P.E.
33 years' experience in chemical industry & academia
tafzeelkhaliq@nfciet.edu.pk

Engr. Rasool Ahmad
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.) P.E.
30 years' experience in chemical industry & academia
rasoolahmad@nfciet.edu.pk

Engr. Nadeem Hassan
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.) P.E.
29 years' experience in chemical industry & academia
nadeemhassan@nfciet.edu.pk

Dr. Muhammad Saleem Khan
Ph.D. (Chem. Engg.)
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)
16 years' experience in research & academia
mskhan@nfciet.edu.pk

Engr. Mujtaba Ashraf
Ph.D. (in progress)
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.), P.E.
17 years' experience in chemical industry, research & academia
mujtabaashraf@nfciet.edu.pk

Engr. Dr. Sana Saeed
Ph.D. (Chem. Engg.)
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)
16 years' experience in research & academia
sanasaeed@nfciet.edu.pk

Engr. Dr. Nadeem Amin
Ph.D. (Chem. Engg.)
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.), P.E.
15 years' experience in chemical industry, research & academia
nadeem.amin@nfciet.edu.pk

Engr. Dr. Muhammad Rizwan
Ph.D. (Chem. Engg.) South Korea
M.Sc. (Chem. Engg.) South Korea
B.Sc. (Chem. Engg.)
17 years' experience in research & academia
rizwansheikh@nfciet.edu.pk

Engr. Dr. Hidayatullah Mahar
Ph.D.
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)
13 years experience in chemical industry, research & academia
maharhidayatullah@nfciet.edu.pk

Engr. Imran Iqbal
Ph.D. (In Progress)
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)
19 years' experience in Chem.
Industry, research & academia
imraniqbal@nfciet.edu.pk

Engr. Dr Maham Hussain
Ph.D. (Chem. Engg.) Malaysia
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)\
16 years' experience in research
& academia
mahamhussain@nfciet.edu.pk

Engr. Shazia Naz
Ph.D. (In Progress)
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)
16 years' experience in
research & academia.
shazianaz@nfciet.edu.pk

Engr. Dr. Saad Saeed
Ph.D. (Chem. Engg.)
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)
14 years' experience in research
& academia
saadsaeed@nfciet.edu.pk

Engr. Dr. Subhan Azeem
Ph.D. (Chem. Engg.)
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)
13 years' experience in Chemical
Industry, research & academia
msazeem@nfciet.edu.pk

Engr. Muhammad Omer
M.Sc. (Petroleum Engineering)
B.Sc. (Chemical Engineering)
8 years' of experience in Chemical
Industry & Academia
momer@nfciet.edu.pk

Engr. Tahir Zahoor
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)
11 years' experience in research
& academia
tahirzahoor@nfciet.edu.pk
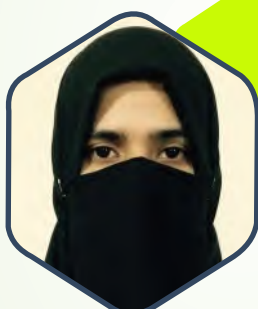
Engr. Laraib Abid
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)
10 years' experience in research
& academia
laraib@nfciet.edu.pk

Engr. Muzaffar Riaz
Ph.D. (In Progress)
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)
07 years' experience in research
& academia
muzaffarriaz@nfciet.edu.pk

Engr. Waseem Javed
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)
20 years' experience in Chemical
industry & academia
waseemnfciet0300@gmail.com

Engr. Danish Iqbal
Ph.D. Energy Engg. (in progress)\
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)
07 years' experience in engineering
design, research & academia
danish.iqbal@nfciet.edu.pk

Chemical Engineering

What do chemical engineers do? Although their backgrounds and professional skills are similar, chemical engineers work in a wide variety of industries, in addition to chemicals and petroleum, such as:

- Chemical Plant operational Engineer
- Energy Engineer/ Energy Auditor
- Manufacturing production Engineer
- Consulting Engineer
- Food Engineers
- Material Engineer
- Analytical Chemist
- Product development engineer
- Pharmaceutical manufacturer Engineer
- Project engineer
- Petroleum Engineer
- Safety Engineer
- Nuclear Engineer
- Utility Engineer
- Environmental Engineer
- Water Treatment Engineer
- Process Engineer
- Sale and Marketing of chemical products
- Control Engineer
- Simulation and Modeling Engineer
- Waste Management
- Universities as a Teaching faculty
- Quality Engineer
- Fuel Engineer (Airport)
- Technical Services Engineer
- Ministry of Environment
- Armed Forces
- Ministry of Defense, Defense industry, etc)
- Ministry of Production

- Textile Industry(Dying process/utilities)
- Ministry of Petroleum and Gas (SNGPL,SSGPL,OGDC,OGRA,
- Research and Process design
- Polymer Engineering

All the industries as mentioned above are involving numerous of chemical process unit. Therefore, chemical engineers play an important role on design, operation, control, troubleshooting, research and management in the chemical process. Chemical process is a combination of process equipment designed to efficiently convert raw materials into finished or intermediate products.

Internalization of Chemical Engineering

Department of chemical engineering at NFCIET Multan has opted Out come Based Education (OBE) since 2017 and duly accredited by Pakistan Engineering Council (PEC). Outcome Based Education (OBE) is an approach of teaching and learning that focuses on what students should be able to attain at the end of the educational program. OBE is a student's centered system which concerns what the students will know and be able to do as learning outcomes. The curriculum development under OBE is therefore an integration of graduates attributes and stakeholders' feedback in cognizance with institution's Vision and Mission.

Integrated Approach of the Program:

The process of curriculum design and development constitutes various interconnected elements with the objective of achieving the intended purpose of the

program. The Plan-Do-Check-Act approach (PDCA).

Plan. This stage begins with an analysis of the stakeholders' needs of faculty, current and past students, employers and society in general. The stakeholders' needs are translated into human resource terminology i.e. graduate competencies which in turn translated into educational taxonomy and learning outcomes. Based on the learning outcomes, curriculum is designed backward to meet PLOs.

Do. The Do plan stage is implemented where curriculum is delivered and learning outcomes are assessed to gauge the achievement of PLOs.

Check. This stage involves the analysis of assessment results and feedback from students and faculty. Areas for improvement are also identified during this stage.

Act. When the learning outcomes are achieved, the curriculum, learning and teaching strategies and assessment methods are standardized. Best practices are shared and improvement is made for the next cycle of PDCA.

Mission
To nurture engineers for industry and academia with strong values of professionalism and scientific inquiry so as to enable them to achieve high standards of industry while maintaining sound financial health.

Program Educational Objectives (PEO)

The graduates of the program of Bachelor of Chemical Engineering are to be trained in such a way to solve the Industrial and Engineering problems using their scientific, mathematical, and soft skills. Hence, the program objectives are to produce:

PEO 1: Graduates with engineering, technology, analytical, innovative, and effective communication skills to solve industrial problems maintaining sustainable environment.

PEO 2: Graduates capable to handle industrial problems with effective leadership, teamwork, professional competency and maintaining high moral values.

PEO 3: Graduates capable of demonstrating their soft skills using modern tools.

Industrial Advisory Board (IAB)
IAB has been established in the chemical department to achieve the following objectives:
♦ Link the Institute to industry for benefit through memorandum of understanding/agreement
♦ Obtain support from industry for institute program and projects
♦ Involve industrial personnel for curriculum development
♦ Organize visits for institute-industry relationship
♦ Arrange internship for students every year
♦ Link institute academic staff to industry for collaboration research and consultancy work
♦ Obtain opportunities in industry for practical experience for NFC-IET students to carry out their final year project thesis
♦ Establish partnership with community based projects and organization
♦ Solve funded industrial-based problems

Memorandum of Understanding with industry and Academia

Memorandums of understanding have been signed with several industrial and organizational entities, to offer the technical expertise of the department for techno-economic growth of industry and social sector. Some of these include,

- Century Paper and Board Mills Limited
- Velosi International
- Water Engineering and Management Services (WEMS)
- Chemical Kinetics
- Multan Chamber of Commerce and Industry
- BinRasheed Group
- Khawaja Mineral Industries
- National Cleaner Production Center
- National Productivity Organization
- Volka Foods International
- NUST

Departmental Quality Assurance Committee (QAC)

The role of QAC is to provide a comprehensive strategy and planning to ensure, maintain and implement quality standards in the department. It will make sure that Annual Monitoring Report (AMR) is prepared and submitted to Head of Department. The committee will be responsible for defining criteria, standards and quality monitoring procedures as per HEC guidelines.

Societies of Chemical Engineering Department

Alumni Association

The mission of the Chemical Engineering Department Alumni Association is to create an environment in which alumni stay connected to the department through social, cultural, and educational activities, and support it with their work, wisdom, and wealth. The association has helped in strengthening the bond between the alumni and the department. The department keeps track of the alumni and helps them in job seeking and postgraduate studies even after passing out through the association. Several alumni have been invited to deliver technical and motivational lectures to the upcoming graduates which have been extremely beneficial. The Alumni Association implements its mission in partnership with the Institute's Office of Alumni.

OUR ALUMNI - OUR PRIDE

Engr. Irfan Ahmad Malghani
(Session-93)
SDM Production
DG Cement

Engr. Adnan Pirzada
(Session-98)
General Manager
Dewan Distillary Co.

Engr. Rashid Mehmood
(Session-99)
Senior Engineer
PPL

Dr. Khurram Shahzad
(Session-2K)
Lecturer
University of Gujrat

Engr. Muhammad Usman Rauf
(Session-2K1)
Head Talent Acquisition & Employer
Branding, Total PARCO

Engr. Muhammad Junaid Sheikh
(Session-2K3)
Development Manager
MPCL

Engr. Sajjad Javed
(Session-2K4)
Process Engineer
OGDCL

Engr. Bilal Omer
(Session-2K4)
Assistant Manager HSE
KAPCO

Engr. Ejaz Rasool
(Session-2K5)
Assistant Manager,
Nimir Chemicals

Chemical Department Technical Society (CDTS):

CDTS was launched in the chemical department with the aim to conduct seminars, conferences and technical competitions and provide platform for the budding engineers to enhance their communication and presentation skills for a successful career. Another objective of CDTS is to expand the presence of chemical department on social media platforms. To achieve these, the society has been inviting

personnel from top managerial positions in industrial sector for the last three years which has helped in bridging gap between academic and industrial sector. CDTS has organized more than 12 seminars and webinars in a short span of three years. With the slogan "Will to build the future", CDTS is doing an excellent job of providing leadership to the students. Recently, CDTS has launched official YouTube Channel of the Chemical Department.

Chemical Department Literary Society (CDLS):
The literary societies are an important factor in the educational institutes. Our CDLS was introduced with the aim to promote healthy reading and writing habits among students. This helps the students to show their talent using the society as their platform. The society has organized different activities like Seerat-un-Nabi Conference, Motivational lectures, Sham e Ghazal and many more. It can also give charm to students during their busy schedule by conducting "funny poetic symposium". Under its platform, we have conducted English as well as Urdu debate competitions. Our focus is to release students from academic stress through social involvement, bring together students having similar interests and learn about activities. With the slogan **Touch the sky we give the way;** our literary society is doing a good job for providing better skills to the students.

Chemical Department Blood Donation Society (CDBDS):
Chemical Department Blood Donation Society (CDBDS) NFC IET was established in 2019 under the supervision of Engr. Dr. Sadiq Hussain, HoD of Chemical Engineering Department. CDBDS-NFC IET has a team of highly motivated faculty members and students, who maintain a complete database of blood donors that include volunteers from students and faculty/staff. This society helps in securing timely blood donations in emergencies as well as in routine requirements. The objectives of the society are: to create awareness of donating blood and conducting health awareness programs; to motivate students to donate blood; to develop a database of our students for blood donation; and to connect needy with volunteer blood donors.

Faculty Development
The faculty at the Department of Chemical Engineering is a blend of qualified professionals rich in teaching, training, research, and industrial experience. The faculty comprises of Ph.D. and M.Sc. Engineering qualified personnel with vast industrial and engineering design experience.

As a firm believer on the significance of continuous improvement, Department of Chemical Engineering has always encouraged the faculty members to achieve professional and academic milestones. In the year 2023, one faculty member of the Department, Engr. Dr. Hidayatullah Mahar completed his PhD from the Mehran University of Engineering and Technology, Jamshoro, Sindh. He has published two research papers in international refereed journals while two more papers are in the pipeline.

Department Facilities

Department has state of the art Ammonia Miniature Plant equipped with boiler, stripping tower, absorber, cooling tower, and compressor. This plant was installed by COSMO International Japan in 1985. Other facilities are given below:

- Particulate Technology Lab
- Physics Lab
- Chemical Lab
- Fluid Flow Lab
- Fuels & Combustion Lab
- Instrumentation & Process Control Lab
- Miniature Plant
- Heat & Mass Transfer Lab
- Thermodynamics Lab
- CPT/Unit Process Lab
- Chemical Reaction Engineering Lab
- Engineering Workshop
- Computer Lab
- Mass Transfer Lab
- Chemical Engineering Plant Design & Simulation Lab

Research Centers

NFC IET has established Coal & Sustainable Energy Research Center with the financial assistance of Ministry of Science & Technology (MOST) Govt. of Pakistan by spending Rs.67.34 million.

The objectives of this project are to carry out Research Work on Coal/biomass Combustion, Gasification and Beneficiation. State-of-the-art Center is equipped with analytical and experimental research rig facilities. The Research Center is currently providing research support for energy and environmental research programs. In addition to performing proximate and ultimate analysis, it provides a wide variety of testing. Calorific value of fuel, flue gas analysis, grindability index of coal, sieve analysis, size reduction, ash fusion temperature, analysis of refinery Gas/Natural Gas/Coal/Biomass Gases and Element Analysis of Drinking Water.

Our mission is to provide both high quality and reliable, physical and chemical analytical testing services and technical trained manpower to the energy, textile, sugar, and cement sector of the country.

B.Sc. (CHEMICAL ENGINEERING) CURRICULUM
SEMESTER SYSTEM

SEMESTER-1			SEMESTER-2		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-001	Understanding of Quran	0+0	HQ-002	Understanding of Quran	0+0
HU-101	Islamic Studies/Ethics	2+0	HU-102	Ideology & Constitution of Pakistan	2+0
ENG-101	Functional English	3+0	ENG-201	Expository Writing	3+0
QR-101	Quantitative Reasoning-I	3+0	QR-102	Quantitative Reasoning-II	3+0
NS-101	Inorganic & Organic Chemistry	2+1	NS-102	Applied Physics	2+1
ID-101	Engineering Drawing & Graphics	0+1	ID-102	Workshop Practice	0+1
CS-101	Application of Information & Comm. Tech.	2+1	NS-112	Physical & Analytical Chemistry	2+1
ChE-101	Chemical Engineering Principles-I	2+0	ChE-102	Chemical Process Industries	3+0
	Total Credits	**17**		**Total Credits**	**18**

SEMESTER-3			SEMESTER-4		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-003	Understanding of Quran	0+0	HQ-004	Understanding of Quran	0+0
HU-107	Professional Ethics	2+0	MA-102	Linear Algebra & Differential Equation	3+0
HU-201	Civic & Community Engagement	2+0	ID-202	Occupational Health & Safety	1+0
MA-101	Calculus & Analytical Geometry	3+0	CS-201	Programming & Data Science	2+1
ID-201	Engineering Materials	2+0	ChE-204	Chemical Engineering	2+0
ChE-201	Chemical Engineering Thermodynamics-I	2+1	ChE-205	Heat Transfer	3+1
ChE-202	Fluid Mechanics-I	2+1	ChE-206	Particulate Technology	3+1
ChE-203	Chemical Engineering Principles-II	2+0			
	Total Credits	**17**		**Total Credits**	**17**

SEMESTER-5			SEMESTER-6		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-005	Understanding of Quran	0+0	HQ-006	Understanding of Quran	0+0
MS-201	Entrepreneurship	2+0	SS-202	Engineering Economics	2+0
ID-301	Applied Electrical Engineering	2+1	CS-301	Numerical Methods with Software Applications	2+1
ChE-301	Integrated Management System	3+0	ChE-305	Instrumentation & Process Control	3+1
ChE-302	Mass Transfer	3+1	ChE-306	Chemical Reaction Engineering	3+1
ChE-303	Fluid Mechanics-II	2+0	ChE-307	Transport Phenomena	3+0
ChE-304	Fuels & Energy	2+1			
	Total Credits	**17**		**Total Credits**	**16**

SEMESTER-7			SEMESTER-8		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-007	Understanding of Quran	0+0	HQ-008	Understanding of Quran	0+0
ChE-401	Chemical Process Safety	1+0	ID-401	Maintenance & Utility Engineering	3+0
ChE-402	Separation Processes	3+1	MS-401	Project Management	2+0
ChE-403	Chemical Plant Design	3+0	ChE-407	Environmental Engineering	2+1
ChE-404	Process Modeling, Simulation & Optimization	3+1	ChE-408	Depth Elective-II	2+0
ChE-405	Depth Elective-I	2+0	ChE-409	Depth Elective-III	2+0
ChE-406	Design Project-I	0+3	ChE-410	Design Project-II	0+3
	Total Credits	**17**		**Total Credits**	**15**

Courses	Credit Hours
General Education/Non-Engineering Domain	41
Engineering Domain	84
Flexible	09
Total Program	134

NFC INSTITUTE OF ENGINEERING & TECHNOLOGY
FEDERAL DEGREE AWARDING INSTITUTE
NFC IET
MULTAN-PAKISTAN

DEPARTMENT OF ELECTRICAL ENGINEERING

DEPARTMENT OF
Electrical
Engineering

Prospectus
2024

www.nfciet.edu.pk

Engr. Dr. M. Kamran Liaqat Bhatti
PhD (Power Engineering),
MS (Power Engineering),
BS (Thermal & Nuclear Power Engineering)
PE, Reviewer of Elsevier Science Journals
20-years experience in teaching and research
dr_mklbhatti@nfciet.edu.pk

Head, Deptt. of Electrical Engineering

Engr. Dr. Syed Safdar Raza
Ph.D. Power Systems
M.Sc. Electrical Engineering
B.Sc. Electrical Engineering
14-years experience in industry
and teaching
safdar.raza@nfciet.edu.pk
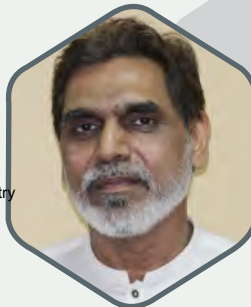
Engr. Abdul Rauf Khan
ME (Telecom)
BSc (Computer Systems Engg)
PE
30-years experience in teaching,
research and industry
abdulrauf@nfciet.edu.pk

Engr. Abid Hussain Chohan
MSc (Telecom Engg)
BSc (Electrical Engg)
PE
35-years experience in telecom
industry and teaching
abidchohan@nfciet.edu.pk

Engr. Muhammad Nawaz Joiya
MSc (Telecom Engg)
BSc (Electrical Engg)
PE
37-years experience in telecom
industry and teaching
nawaz.joiya@nfciet.edu.pk

Engr. Makhdoom M Naeem
MS (Communication & Networks)
BE (Computer Systems Engg)
PE
28-years experience in
industry and teaching
makhdoomnaeem@nfciet.edu.pk

Engr. Dr. Abdul Mannan
PhD (Electrical Engg.)
MSc (Electrical Engg)
BSc (Electrical Engg)
PE
22-years experience in research,
industry and teaching
mannan@nfciet.edu.pk

Engr. Zeshan Raza
Ph.D. (Electrical Engg) in
progress
Msc (Electrical Engg),
BSc (Computer Engg)
RE
20-years experience in
industry and teaching
zeeshanraza@nfciet.edu.pk

Engr. Dr. Omer Ali
PhD (Comm. Engg),
MSc (Comm. Engg), UK
BSc (Computer Systems Engg)
CCIE Data Center (Written)
MS Certified Solutions Expert
MS Certified Educator
MS Certified Trainer, RE
18-years experience in
research and teaching

Engr. Dr. Serosh Karim Noon
Ph.D. (Electrical Engg),
MSc (Electrical Engg),
BSc (Electronic Engg)
RE
18-years experience in teaching
& research
seroshkarim@nfciet.edu.pk

Engr. Dr. M. Siddique
Ph.D. (System Engineering)
Msc (Power System)
BSc (Electronic Engg)
RE
18-years experience in teaching
msiddique@nfciet.edu.pk

Engr. Tehreem Awan
Ph.D. (in progress)
Msc (Electrical Engg)
BSc (Electronic Engg)
RE
11-years experience in teachin
tehremawan@nfciet.edu.pk

Engr. Mujahid Hussain
Ph.D. (in progress)
MS Electrical Engineering
B.Sc. Electrical Engg. (Power)
RE
14-years experience in teaching

Engr. Dr. Hafiz M. Azib Khan
Ph.D. (Power Engineering)
MS (Power Engineering)
B.Sc. (Electronics Engineering
8-years experience in teaching
and industry
hafiz.azib@nfciet.edu.pk

Engr. Dr. Shahzad Ashraf
Ph.D. (Computer Engg.)
ME (CSN),
Bsc (Computer Engg.)
PE
20-years experience in teaching
and industry
shahzadashraf@nfciet.edu.pk

Engr. Sadaqat Ali
MSc (Electrical Engg)
BSc (Computer Engg)
RE
17-years experience in teaching
sadaqatali@nfciet.edu.pk

Engr. Dr. Saqib Ali
Ph.D. Electrical (Power) Engg.
M.Sc. Electrical (Power) Engg.
B.Sc. Electronics Engineering
RE
11-years experience in teachin
industry and research
saqib.ali@nfciet.edu.pk

Engr. Dr. Furqan Memon
Ph.D. (Control Engg)
MSc (Mechatronic Engg)
BE (Electronics)
RE
14-years experience in teac
furqan@nfciet.edu.pk

Engr. Ameer Abbas
ME (Telecom Engg)
BSc (Computer Engg.)
RE
18-years experience in teaching
ameerabbas@nfciet.edu.pk

Engr. Javaria Maqbool
Ph.D. (in progress)
MSc (Electrical Engg),
BSc (Electrical Engg)
RE
14-years experience in teachin
and research
javariamaqbool@nfciet.edu.pk

Engr. Muhammad Ahsan Javaid
MS (Electrical Engg.)
BSc (Electronic Engg.)
RE
8-years experience in research
and teaching
ahsanjavaid888@gmail.com

Engr. Tahir Mahmood Bhatti
MS (Electrical Engg),
BSc (Electronic Engg)
RE
14-years experience in teaching
tahirmahmood@nfciet.edu.pk

Engr. Saima Akram
MS Electrical Engineering
B.Sc. Electrial Engineering
RE
11-years experience in teachin
saimaakram@nfciet.edu.pk

Engr. Mughees Riaz
MS Electrical Engineering
B.Sc. Electronics Engineering
RE
8-years experience in teaching &
industry
mugheesriaz@nfciet.edu.pk

Electrical Engineering

The Department of Electrical Engineering was established in 2001. Since its inception the department is serving the people of Southern Punjab. Our alumni hold esteemed positions in multitude of national and international organizations, while our students are leaving a lasting impact across diverse sectors including design and infrastructure, service industry, R&D and beyond.

Being one of the oldest and important degree program at NFC Institute of Engineering & Technology, Multan. The department preserves distinction in education and carries out diverse tasks for worldwide endorsement. The objective of the Electrical Engineering Program is as follows:

Program Educational Objectives

1. Proficiency in engineering knowledge and tools usage for the design, analysis and evaluation of complex engineering problems.
2. Enhance their knowledge and skills while providing effective solutions keeping in view the environmental and societal aspects.
3. Contribute as a team member or manager, demonstrating professionalism.

These PEOs are prominently displayed on several notice boards around the department.

Specializations

Department of Electrical Engineering at the institute offers BSc Degree in Electrical Engineering with specialization in the following three growing sub-areas:

- Computer Systems Engineering
- Electronics Engineering
- Power Engineering

Students enrolled in the program, study common subjects for the first four semesters. After that they are regrouped to a specialization, based on their preference and obtained Cumulative Grade Point Average (CGPA) up to that point. This approach not only provides enough prologue to the field of Electrical Engineering before they study specialized courses, but makes them eligible to compete for a

wide spectrum of employment opportunities at both national and international levels.

Computer Engineering students are trained in the field of computing, software engineering, Artificial Intelligence, Bio-Informatics and other hardware development tools related to R&D. Electronic engineering is biased toward Power Electronics, Signal Processing, and VLSI Design. Power Engineering has been observed as neglected field in the country for the last one decade which has resulted in shortage of skilled persons in the field. The department has taken on this challenge and initiated this specialization in 2010 focussing on Power System Protection, Power Generation, Power Transmission and Distribution, and Efficient Transmission and utilization of Electrical Energy.

Elective subjects of each specialization are designed according to the latest job market requirements and are regularly updated with changing need of targeted market by the feed back of Industrial Advisory Board

Emerging Trends in Electrical Engineering:
We, at department of Electrical Engineering are aware of emerging subfields of Electrical Engineering and have designed our curriculum and planned our laboratory facilities accordingly. A few such fields are as under:
• Wireless Transmission of Electrical Energy
• Satellite Controlled Power Systems
• Intelligent Power System Protection Devices
• Utilization of Wireless Sensor Networks for Developing World
• 3-G Broad Band Networks
• Microelectronics
• VLSI Design
• Photonics
• Artificial Intelligence and Robotics

Curriculum:
The department has a history of revising curriculum right from the commencement of program in 2001.

Presently, it is as per the latest guidelines of Higher Education Commission and Pakistan Engineering Council. It is regularly revised in consultation with experts of the field in the country. Course contents have been designed keeping in view the background knowledge of students and core electrical engineering concepts. Advanced courses are included and dropped as per the changing market and postgraduate requirement at both national and international level.

Faculty:
The department has ample number of qualified faculty members trained to deliver knowledge skilfully by teaching a variety of electrical engineering subjects in range and depth. In addition to having relevant higher qualification in the area, they have versatile educational and industrial experience within country and abroad.

The faculty is actively involved in ongoing research in various sub-fields of Electrical Engineering and has produced many good quality research contributions in international journals and conferences in the last few years.

Research:
NFC Institute of Engineering & Technology is visualised to grow as a modern center of excellence for research and development in the field of science, engineering and technology. The mentors of the institute ensure keen interest of faculty in tendering research publications in well-reputed national and international journals frequently.

Curriculum Components:
The major academic components of the undergraduate degree programme is described below:

Basic Courses
Courses in Physics, Chemistry, Mathematics and introductory engineering are common for students of all specializations before they move on to the

major courses.

Humanities and Management Science Courses

Common courses in English language, social sciences and management are required for all students. They are meant to include the student's awareness of history and culture, to help them cultivate aesthetic and moral dimensions of their personalities and to equip them with interpersonal and managerial skills.

Core and Elective Courses

Students are required to take many core and elective courses for their specialization which are listed in the curriculum.

Interdisciplinary Courses

Students are required to select some courses offered by departments other than Electrical Engineering. Such courses aim at providing broader base to their studies, and widening their knowledge of allied fields, which is mandatory for their areas of specialization.

Final Year Project

In the final year, students have to take a 6-credit project. In consultation with their faculty supervisors. Students are encouraged to opt projects in the area of their specialization. They are expected to complete their projects and present their reports by the end of the 8th semester. Students are actively encouraged to participate in various FYP Competitions at national level, providing invaluable opportunities to refine their presentation and technical skills. Several outstanding groups revived FYDP functioning hosted by PEC is last 3 years.

Summer Internships

Every student must complete a practical training of four to eight weeks during the summer of second or third professional years at various relevant industries in the country and submit a formal written report. There is a departmental industrial liaison office to facilitate the students in this regard.

Laboratories:

To fulfil the requirements of the program, the department has a number of furnished laboratories which give students an opportunity to have hands on experience on the state of art equipment like field Programmable Gate Array, Digital Signal Processing Trainer, Advanced Communication Trainers, Optoelectronics Trainers, Fibre Optic Splicing Machines and Satellite Communication Trainers. Laboratories of certain advanced courses meet industrial/ commercial requirements which enable our graduates to compete for challenging employment opportunities in the country and abroad just after graduation.

Following laboratories of the department are equipped with state of art equipment in sufficient quantity:

- Power Electronics Lab
- Signal Processing Lab
- Electronics Lab
- Microprocessor & Digital Electronics Lab
- Computer Lab
- Project Lab
- Communication Lab
- General Purpose Computer Lab
- Applied Physics and Electrical Machines Lab
- Instrumentation & Industrial Electronics Lab
- Computer Network Lab

Following Labs are added to further strengthen the department:

- Power System Protection Lab
- Power Transmission & Distribution Lab
- Control Lab
- ETAP Power Lab

PEC Accreditation:

Pakistan Engineering Council (PEC) is a legal body meant to accredit engineering programs run by various universities/institutions in the country on fulfilment of minimum requirement of land, building faculty, curriculum, budget and laboratories etc. Right from our first intake in 2001, the department got all the batches accredited by PEC which has helped our students a lot to compete for job

opportunities in public sector and to get enrolled in various postgraduate's programs locally and abroad.

From Session 2016, our batches are accredited at Level-II of PEC. It means their degree is valid all over the world and they can work there as professional engineers without any test.

Opportunities for Employment & Higher Studies:

The department has produced thousands of graduates since 2001 which are either employed, self-employed or enrolled for higher studies in the country and abroad. Power generation & transmission, telecommunication, marketing & design, instrumentation & control, teaching at undergraduate level and research & development are some of the fields our graduates have excelled in. Organizations related to research & development in the field of Electrical and Electronic Engineering and software design visit the department every year to induct graduating students.

The degree offered by the department has national and international acceptability. Many of our graduates are enrolled in while some of them have completed their postgraduate studies from reputed public-sector universities in Punjab, Sindh and Capital. Moreover, top ranked universities, in technologically advanced countries like Canada, Australia, UK, Germany and South Korea have accepted our graduates for M.Sc. and PhD degrees and have awarded postgraduates degrees to many of them. Our graduates who have completed their postgraduate studies are employed in reputed organizations related to R&D, services, manu-facturing, consultancy and teaching both within the country and abroad.

Job Placement Opportunities

The department extends its help to the student in career counseling. The job placement office also collaborates with prestigious organization such as PARCO, FATIMA GROUP and many others to host on-campus job drives providing graduating students with ample opportunities for career placement. In the past years more than 25 students secured jobs from campus drives in national organizations.

Industrial Advisory Board

The department gives utmost importance to developing and strengthening links with the local industry in order to seek their help in offering useful practical and industrial skills to our students via regular seminars and workshops. Moreover, such industrial linkages could result in job opportunities for the graduating students. Students and faculty members are encouraged to conduct projects which are relevant to the current needs of the industry.

The department has established an industrial advisory board including professional engineers working in various engineering organizations. Members of IAB are highly experienced engineer from different organizations which are potential employers of our graduate. Also, some Alumni which are successfully running their career are also members of the Board.

Feedbacks for PEOs Attainment

The department of the electrical engineering is striving hard to develop and strengthen link with the industry in order to get their feedback regarding our graduates working in the industry and improve our program based on their feedback. For that purpose, an employer survey form has been developed. The questions have been carefully designed so that feedback is then analyzed to ascertain whether a specific PEO has been attained or not. The feedback from employers is planned to gather once a year.
Additionally, alumni feedback is also gathered in order to get an assessment regarding their academic experience at NFC IET. For this purpose, an online alumni feedback form has been developed which covers most of the requirements of PEOs.

B.Sc. ELECTRICAL ENGINEERING
Specialization in
Computer Systems, Electronics and Power Engineering

SEMESTER-1			SEMESTER-2		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-001	Understanding of Quran	0+0	HQ-002	Understanding of Quran	0+0
ENG-101	Functional English	3+0	MT-201	Differential Equations	3+0
MT-101	Calculus and Analytical Geometry	3+0	NS-109	Discrete Mathematics (Natural Science Elective)	3+0
EE-101	Linear Circuit Analysis	3+1	GE-102	Electrical Workshop Practice	0+1
CS-101	Application of ICT	2+1	HU-102	Ideology & Constitution of Pakistan	2+0
GE-101	Engineering Drawing	0+1	CS-102	Computer Programming	3+1
NS-102	Applied Physics	2+1	EE-102	Electronic Devices and Circuits	3+1
	Total Credits	17		Total Credits	17

SEMESTER-3			SEMESTER-4		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-003	Understanding of Quran	0+0	HQ-004	Understanding of Quran	0+0
MT-202	Complex Variables and Transforms	3+0	HU-XXX	Social Sciences (Elective)	2+0
HU-202	Arts and Humanities (Comm. & Presentation Skills)	2+0	MT-102	Linear Algebra	3+0
EE-201	Digital Logic Design	3+1	MT-203	Probability and Statistics for Engineers	3+0
CS-201	Data Structure and Algorithms	3+1	HU-101	Islamic Studies/Ethics	2+0
EE-202	Electrical Network Analysis	3+1	EE-203	Signals and Systems	3+1
HU-202	Occupational Health and Safety	1+0	EE-204	Electromagnetic Field Theory	3+0
	Total Credits	18		Total Credits	17

SEMESTER-5			SEMESTER-6		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-005	Understanding of Quran	0+0	HQ-006	Understanding of Quran	0+0
EE-301	Electrical Machines	3+1	EE-304	Linear Control Systems	3+1
EE-302	Microprocessors and Interfacing	3+1	EE-305	Power Distribution & Utilization	3+1
EE-303	Communications Systems	3+1	XX-301	Depth Elective (Core-I)	3+0/1
HU-201	Civics and Community Engagement	2+0	MS-201	Entrepreneurship	2+0
GE-XXX	Multi-Disciplinary Engineering (Elective)	3+0	ENG-201	Expository Writing	3+0
	Total Credits	17		Total Credits	16/17

SEMESTER-7			SEMESTER-8		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-007	Understanding of Quran	0+0	HQ-008	Understanding of Quran	0+0
XX-401	Depth Elective (Core-II)	3+0/1	MS-401	Project Management	2+0
XX-XXX	Depth Elective-I	3+0/1	XX-XXX	Open Elective-II	3+0
XX-XXX	Depth Elective-II	3+0/1	XX-XXX	Depth Elective-III	3+0/1
XX-XXX	Open Elective-I	3+0	XX-XXX	Depth Elective-III	3+0
EE-415	Final Year Project-I	0+2	EE-425	Final Year Project-II	0+4
	Total Credits	14/17		Total Credits	16/17

Arts and Humanities Electives

HU-104   History

HU-107   Professional Practices

HU-109   Philosophy

HU-110   Elementary Spanish

HU-111   Elementary Arabic

HU-112   Elementary French

HU-113   Elementary Chinese

HU-201   Civics and Community Engagement

HU-202   Occupational Health & Safety

HU-301   Communication and Presentation Skills

Electives for Social Science

SS-201   Sociology

SS-203   Organizational Behavior

SS-204   Psychology

SS-208   Critical Thinking

SS-210   Engineering Laws

SS-211   Engineering Economics

SS-213   Engineering Management

SS-216   Leadership and Personal Grooming

Electives for Natural Science

NS-104   Essential of Biology

NS-108   Multivariable Calculus

NS-109   Discrete Mathematics

NS-110   Numerical Analysis

NS-111   Applied Chemistry

DEPTH ELECTIVES

Electives for Power Stream

PE-301   Power Generation   (Depth Core-I)

PE-401   Power System Analysis   (Depth Core-II)

PE-402   Electrical Power Transmission (Depth Elective I)

PE-403   Power System Protection   (Depth Elective II)

PE-404   Power System Operation & Control

PE-405   Electrical Machine Design & Maintenance

PE-406   High Voltage Engineering

PE-407   Renewable Energy Systems

PE-408   FACTS and HVDC Transmission

PE-420   Smart Grid

PE-410   Instrumentation and Measurement

EE-411   Power Electronics

Electives for Electronics Stream

EC-301   Electronic Circuit Design (Depth Core-I)

EC-401   Power Electronics   (Depth Core-II)

EC-402   FPGA Based Digital Design (Depth Elective I)

EC-403   Digital Signal Processing (Depth Elective II)

EC-404   Analogue Integrated Electronics

EC-405   VLSI Design

EC-406   Optoelectronic

EC-407   Digital Control Systems

EC-408   Biomedical Instrumentation

EC-409   Wave Propagation and Antennas

EC-410   RF and Microwave Engineering

EC-411   Nanotechnology

EC-412   Micro Electro Mechanical Systems (MEMS)

EC-413   Industrial Electronics

EC-414   Application Specific Integrated Circuits Design

CS-411   Digital Signal Processing

CS-414   Artificial Intelligence

CS-415   Embedded system

CS-427   Internet of Things

Elective for Computer Systems Stream

CS-301   Computer Communication Networks (Depth Core-I)

CS-302   Operating Systems (Depth Core-II)

SET-A (Networking)

CS-401   Network Protocols and Standards

CS-402   Network Security

CS-403   Network and System Programming

CS-404   Cloud Computing

CS-405   Cyber Security Systems

SET-B (Automation)

CS-411   Digital Signal Processing

CS-412   Digital Image Processing

CS-413   Robotics

CS-414   Artificial Intelligence

CS-415   Embedded Systems

SET-C (General)

CS-421   Data Base Systems

CS-422   Data Communication

CS-423   Computer Vision

CS-425   Image and Video Coding

CS-426   Digital Control

CS-427   Internet of Things (IoT)

CS-428   Computer Organization

CS-430   Digital Systems Design

CS-431   Unmanned Aerial Vehicles (UAVs)

CS-432   Geo-Informatics

NFC INSTITUTE OF ENGINEERING & TECHNOLOGY
FEDERAL DEGREE AWARDING INSTITUTE
NFC IET
MULTAN-PAKISTAN

DEPARTMENT OF
Mechanical
Engineering

Prospectus
2024

www.nfciet.edu.pk

Engr. Dr. Zulkarnain Abbas
Ph.D. (Mechanical Engg. & Engg. Thermal Physics)
M.Sc. Mechanical Engineering)
B.Sc. (Mechanical Engineering)
9-years' experience in Research & Teaching
HEC Approved Ph.D. Supervisor
zulkarnain@nfciet.edu.pk

Head, Mechanical Engineering Department

Engr. Dr. Syed Nasir M. Gardezi
Ph.D. (Power & Farm Machinery)
M.Sc. (Mechanical Engineering)
B.Sc. (Mechanical Engineering)
32 years' experience in Chemical
Industry, Research & Teaching
nasirgardezi@nfciet.edu.pk

Engr. Sajjad ur Rehman
M.Sc. (Thermal Power Engineering)
B.Sc. (Mechanical Engineering)
13 years' experience in Research,
Industry & Teaching
sajjad.rahman@nfciet.edu.pk

Engr. Mehwish Chishti
MS (Mechanical Engineering)
MS (Project Management)
B.Sc. (Mechanical Engineering)
6 years' experience in Industry,
Research & Teaching
mehwish@nfciet.edu.pk

Engr. Muhammad Umais
MS (Mechanical Engineering)
BE (Hons) Mech. Engg. from UK
12 years' experience in Research
& Teaching
muhammad.umais@nfciet.edu.pk

Engr. Umer Bin Nooman
MS (Design & Manufacturing Engg.)
B.Sc. (Mechanical Engineering)
5 years' experience in Research &
Teaching
umernooman@nfciet.edu.pk

Engr. Ali Hashmi
MS (Mechanical Engineering)
B.Sc. (Mechanical Engineering)
7 years' experience in Industry &
Teaching
ali.hashmi@nfciet.edu.pk

Engr. Abdul Khaliq Khan
MS (Mechanical Engineering)
B.Sc. (Mechanical Engineering)
6 years' experience in Industry &
Teaching
akhaliq@nfciet.edu.pk

Engr. Muhammad Hassan
MS (Mechanical Engg.)
B.Sc. (Mechanical Engineering)
7 years' experience in Research &
Teaching
muhammadhassan@nfciet.edu.pk

Engr. Muhammad Haseem Umer
MS (Mechanical Engg.)
B.Sc. (Mechanical Engineering)
2 years' experience in Teaching
m.haseem.umer@gmail.com

Mechanical Engineering is an exciting/thrilling field of Engineering because it encompasses all Engineering aspects of almost everything that moves in the universe. Mechanical Engineers are concerned with the principles at motion, energy and force. Generally, a machine converts one form of energy or movement into another. It is the responsibility of engineers to design machines whose parts and assemblies function in a safe and reliable, efficient, and predictable fashion. Indeed, the numerous laws and principles developed by scientists are the everyday tools of the mechanical engineer. Anything the engineer does that is related to the motion and dynamics of heat, gas, air, liquids and solid materials. Smart structures and robotics requires the understanding and application of the underlying basic science.

Mechanical engineering encompasses many specialties. Mechanical engineers analyze problems to see how mechanical and thermal devices might help to solve the problems, Design or redesign mechanical and thermal devices or subsystems, using analysis and computer aided design, investigate equipment failures, develop and test prototypes of devices they design and oversee the manufacturing process.

Mechanical engineers design power-producing machines, such as electric generators, internal combustion engines, and steam and gas turbines, as well as power-using machines, such as refrigeration and air-conditioning systems.

Mechanical engineers design other machines inside buildings, such as elevators and escalators. They also design material-handling systems, such as conveyor systems and automated transfer stations.

Like other engineers, mechanical engineers use computers extensively. Mechanical engineers are routinely responsible for the integration of sensors, controllers, and machinery. Computer technology helps mechanical engineers create and analyze designs, run simulations and test how a machine is likely to work, interact with connected systems, and generate specifications for parts.

Mechanical engineers apply scientific methods to the solution of engineering problems. Mechanical engineering teaches design, analysis and simulation techniques to realize ideas and dreams to improve life on earth. It also teaches how to create and realize next generation products, systems and organizations.

Department

NFC-IET's Mechanical Engineering Department which is a new addition to the upgraded degree awarding institute is dedicated to the academic excellence in our course offerings. We intend to engage our students in challenging and rewarding work as soon as they decide to explore Mechanical Engineering. The Mechanical Engineering Department is an ideal environment for students who have proven to be the best and the brightest; those who are prepared and eager for the challenge.

Program

The Department offers 4 years B.Sc. Mechanical Engineering program. Its strong and interactive curriculum, based on the recommendations of HEC and PEC, and hands on learning will make students

capable of taking their career to the next level, whether it be in the professional engineering practice or in advance study. The Department aim to focus on high quality teaching along with integrated laboratory experience. It effectively connects teaching of engineering education to active research in different areas. It provides excellent education in the application of the traditional blend of the core areas of dynamics, vibrations, structural analysis, materials, thermodynamics, fluid mechanics and heat transfer and control theory for the analysis, design and manufacturing of a wide variety of mechanical system. The students undergo extensive course work, project work and laboratory experience during their studies.

Mission

To provide Research based education that builds within students a solid foundation in Mechanical Engineering Principles having critical and creative thinking, communication and problem-solving abilities and prepares motivated graduates possessing the ability of continuous social/professional growth.

Program Education Objectives (PEOs)

1. Provide sustainable solutions to challenging mechanical engineering problems using acquired knowledge.
2. Exhibit continual professional growth in learning modern engineering and its application.
3. Work as effective team members with leadership qualities & communication skills.
4. Work ethically and contribute towards socio-technical development of the country.

Laboratories

Mechanical Engineering Labs are designed to supplement the degree program. The department places utmost importance on laboratory courses, hence efforts have been made to have the laboratories equipped with modern state of the art equipment, which permits the students to apply his or her theoretical knowledge to test engineering principles with effective test and measuring techniques. The laboratories are designed to provide hands on experience in basic measurements and instrumentation equipment and the application of classroom theory. The aim of the laboratory course is to conduct experiments in the major areas of MECHANICAL ENGINEERING. The experiments in this

laboratory course are tailored towards a specific engineering discipline. For this purpose, IET has established the following labs

- Engineering Workshop
- Engineering Drawing Hall
- Mechanics Lab (Statics & Dynamics)
- Mechanics of Machines
- Mechanics of Materials
- Refrigeration & Air Conditioning
- Thermodynamics Lab
- Fluid Mechanics Lab
- Heat & Mass Transfer Lab
- IC Engine Lab
- CAD/CAM Lab
- Power Plant Lab
- Manufacturing Lab

LAB EQUIPMENT

B.Sc. (MECHANICAL ENGINEERING) CURRICULUM
SEMESTER SYSTEM

SEMESTER-1			SEMESTER-2		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HU-101	Islamic Studies	2+0	HU-102	Ideology & Constitution of Pakistan	2+0
ENG-101	Functional English	3+0	HU-107	Professional Ethics	2+0
MA-101	Calculus and Analytical Geometry	3+0	CS-102	Computer System & Programming	2+1
NS-102	Applied Physics	2+1	MA-104	Vector & Complex Variables	3+0
CS-101	Applications of ICT	2+1	ME-121	Engineering Mechanics-II: Dynamics	2+0
ME-111	Engineering Mechanics-I: Statics	2+0	ME-122	Engineering Drawing & Graphics	1+1
ME-112	Workshop Practice	1+1	ME-123	Industrial Materials	2+0
HQ-001	Understanding of Quran	0+0	ME-124	Engineering Mechanics Lab.	0+1
			HQ-002	Understanding of Quran	0+0
	Total Credits	**18**		**Total Credits**	**17**

SEMESTER-3			SEMESTER-4		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
MA-103	Differential Equations	3+0	ENG-201	Expository Writing	3+0
EE-201	Electrical Engineering	2+1	HU-201	Civics & Community Engagement	2+0
ME-231	Thermodynamics-I	3+0	ME-241	Mechanics of Machines-I	2+0
ME-232	Mechanics of Materials-I	2+0	ME-242	Thermodynamics-II	3+0
ME-233	Manufacturing Processes	2+1	ME-243	Fluid Mechanics-II	3+0
ME-234	Fluid Mechanics-I	3+0	ME-244	Machine Design & CAD-I	2+1
HQ-003	Understanding of Quran	0+0	ME-245	Thermodynamics Lab.	0+1
			ME-246	Fluid Mechanics Lab.	0+1
			HQ-004	Understanding of Quran	0+0
	Total Credits	**17**		**Total Credits**	**18**

SEMESTER-5			SEMESTER-6		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
MA-301	Engineering Statistics	2+0	NS-110	Numerical Analysis	2+0
MS-101	Health, Safety & Environment	1+0	MS-201	Entrepreneurship	2+0
EE-302	Industrial Electronics	2+1	ME-361	Mechanics of Machines-II	2+0
ME-351	Machine Tools & Machining	2+1	ME-362	Refrigeration & Air Conditioning	3+0
ME-352	Machine Design & CAD-II	2+1	ME-363	Mechanics of Machines Lab.	0+1
ME-353	Mechanics of Materials-II	2+0	ME-364	Heat & Mass Transfer	3+0
ME-354	Mechanics of Materials Lab.	0+1	ME-365	Finite Element Analysis	2+1
ME-355	Metrology & Quality Assurance	2+1	ME-366	HMT & RAC Lab.	0+1
HQ-005	Understanding of Quran	0+0	HQ-006	Understanding of Quran	0+0
	Total Credits	**18**		**Total Credits**	**17**

SEMESTER-7			SEMESTER-8		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
CS-403	Applied AI & Machine Learning	2+1	MS-401	Project Management	3+0
ME-471	Power Plant	3+0	ME-481	Instrumentation & Control	2+1
ME-472	IC Engine	3+0	ME-482	Mechanical Vibration	2+1
ME-473	IC Engine & Power Plant Lab.	0+1	ME-4XY	Technical Electives-II	2+1
ME-4XY	Technical Electives-I	2+1	ME-499	FYDP-II	0+3
ME-499	FYDP-I	0+3	HQ-008	Understanding of Quran	0+0
HQ-007	Understanding of Quran	0+0			
	Total Credits	**16**		**Total Credits**	**15**

B.Sc. (MECHANICAL ENGINEERING) CURRICULUM 2024
TECHNICAL ELECTIVE COURSES

Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
ME-414	Renewable Energy Technology	2+1	ME-424	Computational Fluid Dynamics	2+1
ME-415	Maintenance Engineering	2+1	ME-425	Reverse Engineering & Inspection Techniques	2+1
ME-416	Automotive Engineering	2+1			
ME-423	Robotics	2+1	ME-426	Advance Manufacturing Systems	2+1

NFC INSTITUTE OF ENGINEERING & TECHNOLOGY
FEDERAL DEGREE AWARDING INSTITUTE

NFC IET
MULTAN-PAKISTAN

Department of Civil Engineering

Khan of Kalat Mir Ahmed Yar Khan Block

DEPARTMENT OF
Civil
Engineering

Prospectus
2024

www.nfciet.edu.pk

Engr. Dr. Syed Adnan Raheel Shah
Ph.D. Civil Engineering
MS Transportation Engineering
B.Sc. Civil Engineering
15 years' experience in Research,
Industry & Teaching
adnanshah@nfciet.edu.pk

Head, Department of Civil Engineering

Engr. Dr. Abdul Waheed
Ph.D. Civil Engg. (Geotechnical)
M.Sc. Civil Engg. (Geotechnical)
B.Sc. Civil Engineering
37 years' experience in Research,
Industry & Teaching
abdul.waheed@nfciet.edu.pk

Engr. Shafiq ur Rahman
Ph.D. Water Resources &
Irrigation Engg.(In progress)
M.Sc. Water Resource &
Irrigation Engg.
B.Sc. Civil Engineering
10 years' of experience in
Research & Teaching
sr.sameja@nfciet.edu.pk

Engr. Ahsan Rehman Khan
Ph.D. (In progress)
M.Sc. Geo-Technical Engg.
B.Sc. Civil Engineering (Gold Medalist)
13 years' experience in Research,
Industry & Teaching
ahsanrehman@nfciet.edu.pk

Engr. Waqar Mumtaz
Ph.D. (In progress)
M.Sc. Geo-Technical Engineering
B.Sc. Civil Engineering
10 years' experience in Research,
Industry & Teaching
waqar.mumtaz@nfciet.edu.pk

Engr. Akmal Shehzad
M.Sc. Transportation Engg.
B.Sc. Civil Engineering
10 years' experience in
Research & Teaching
akmal.shehzad@nfciet.edu.pk

Engr. Saulat Jillani
Ph.D. (In progress)
M.Sc. Structural Engineering
B.Sc. Civil Engineering
11 years' experience in Research,
Industry & Teaching
saulat.jillani@nfciet.edu.pk

Engr. Mudassir Abbas
MS Civil Engineering (Geotech)
B.Sc. Civil Engineering
8 years' experience in Research,
Industry & Teaching
mudassir.engr1@gmail.com

Engr. M. Saeed Qasim
M.Sc. Civil Engg. (Structures)
B.Sc. Civil Engineering
6 years' experience in Research,
Industry & Teaching
saeed.qasim@nfciet.edu.pk

Engr. Muhammad Ali Kalroo
M.Sc. Structural Engineering
B.Sc. Civil Engineering
12 years' experience in Research,
Industry & Teaching
ali.kalroo@nfciet.edu.pk

42

Engr. M. Nadeem Afzal
M.Sc. Structure Engineering
B.Sc. Civil Engineering
12 years' experience in research,
Industry & Teaching
nadeem.afzal@nfciet.edu.pk

Engr. Mubashir Hassan
M.Sc. Structure Engineering (In progress)
B.Sc. Civil Engineering (Gold Medalist)
2 year experience in Research & Teaching

Introduction and Overview

Civil Engineering stands among the oldest engineering disciplines in human history and is universally recognized as the mother of all engineering disciplines. It is a broad field that incorporates everything we see around us, built using natural or manufactured resources. It widely covers the planning, design, construction, operation and maintenance of buildings, bridges, streets and highways, railways, airports, industries, and infrastructure for water supply, dams, barrages, head-works, sewage, hydraulic structures, irrigation system and many more.

The Civil Engineering Department at NFC Institute of Engineering & Technology was established in fall 2013. The B.Sc Civil Engineering program is accredited by Pakistan Engineering Council (PEC). Currently, B.Sc. Civil Engineering Program is accredited by Pakistan Engineering Council (PEC) at Level-II as per Washington Accord.

Outcome-Based Education (OBE) System

The department adopted the Outcome-Based Education (OBE) system during 2017 as it is significant both for the graduating engineers and the university. Hence, courses were reviewed through statutory bodies and training for faculty members was arranged.

Further, the seminars for students' awareness of the OBE systems were also conducted. As a result, the department completely switched over to the OBE system in fall 2018. The implementation of this system will provide students with an education compatible with international standards to compete in the global job market.

Mission

"To provide a high-quality civil engineering education that equips students with the necessary skills and knowledge through a supportive and stimulating environment. Our department is dedicated to maintaining self-sustainability by integrating academic evaluation standards into our strategic planning and resource management. We aim to produce competent, innovative, and ethically responsible civil engineers who are prepared to contribute effectively to the profession and address societal and environmental challenges."

Program Educational Objectives (PEOs)
Civil Engineering graduates will demonstrate;

➢ **PEO 1:** Effective role towards civil engineering profession based on technical knowledge and analysis skills

➢ **PEO 2:** Capability of investigating, planning, designing and management of civil engineering projects through professional modern tools with a focus on sustainability

➢ **PEO 3:** Effective communication skills with ethical values and teamwork to contribute in multi-disciplinary projects

➢ **PEO 4:** Passion for continuous learning in context of social, environmental and ethical aspects for the betterment of society

Laboratories

The department has the following well-equipped laboratories to meet the academic requirements of students and teachers as well as the professional needs of the government and private organizations:

1. Engineering Mechanics Lab
2. Engineering Surveying Lab
3. Soil Mechanics Lab
4. Concrete & Materials Testing Lab
5. Environmental Engineering Lab
6. Structure Engineering Lab

7. Fluid Mechanics Lab
8. Hydrology and Hydraulics Lab
9. Transportation Engineering Lab
10. Computer and I.T. Lab
11. Drawing Hall

Link With Sustainable Development Goals (SDGs)

Civil engineering plays a significant role in achieving several Sustainable Development Goals (SDGs) outlined by the United Nations. Here are some key links between civil engineering and the SDGs:

SDG 9: Industry, Innovation, and Infrastructure: Civil engineering is directly linked to this goal as it involves the planning, design, construction, and maintenance of infrastructure such as buildings, roads, bridges, water supply systems, and transportation networks. Developing sustainable and resilient infrastructure is essential for economic growth, innovation, and improving quality of life.

SDG 6: Clean Water and Sanitation: Civil engineers play a crucial role in designing and implementing water supply and sanitation systems. They contribute to the development of sustainable water management practices, wastewater treatment facilities, and infrastructure to ensure access to safe drinking water and improved sanitation for all.

SDG 7: Affordable and Clean Energy: Civil engineering is involved in the design and construction of renewable energy infrastructure such as solar and wind power systems, hydroelectric plants, and geothermal energy systems. Civil engineers work towards developing energy-efficient buildings, transportation systems, and smart grid networks to promote clean and affordable energy sources.

SDG 11: Sustainable Cities and Communities: Civil engineers contribute to the development of sustainable urban infrastructure, including transportation systems, green buildings, and resilient city planning. They focus on creating inclusive, safe, and resilient cities that provide access to basic services, efficient transportation, and sustainable housing.

SDG 13: Climate Action: Civil engineering plays a vital role in addressing climate change by developing infrastructure and technologies that reduce greenhouse gas emissions, enhance energy efficiency, and promote sustainable

practices. Civil engineers contribute to climate adaptation strategies, such as coastal protection, flood management, and sustainable drainage systems.

SDG 15: Life on Land: Civil engineering helps in the conservation and sustainable management of natural resources, including land and forests. Civil engineers contribute to projects related to land reclamation, soil stabilization, and sustainable land development practices, aiming to minimize environmental degradation and protect biodiversity.

SDG 17: Partnerships for the Goals: Achieving the SDGs requires collaboration and partnerships between various stakeholders. Civil engineers often work in multidisciplinary teams, collaborating with governments, communities, NGOs, and the private sector to plan, design, and implement infrastructure projects that align with sustainable development objectives.

Civil engineering is an essential field for sustainable development, as it encompasses the design, construction, and management of infrastructure systems that directly impact communities and the environment. By integrating sustainability principles into engineering practices and considering the social, economic, and environmental aspects of projects, civil engineers can contribute significantly to the achievement of the SDGs.

B.Sc. (CIVIL ENGINEERING) CURRICULUM
SEMESTER SYSTEM

SEMESTER-1			SEMESTER-2		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
QR-101	Quantitative Reasoning-I	3+0	QR-102	Quantitative Reasoning-II	3+0
ENG-101	Functional English	3+0	HU-101	Islamic Studies/Ethics	2+0
HU-102	Ideology and Constitution of Pakistan	2+0	CS-101	Application of ICT	2+1
NS-111	Applied Phy. & Electro-Mechanical Fundamentals	2+1	CE-121	Engineering Surveying	2+1
CE-112	Civil Engineering Materials	2+1	CE-122	Engineering Mechanics	2+1
CE-113	Engineering Drawing and CAD	1+2	CE-123	Engineering Geology	2+0
HQ-001	Understanding of Quran	0+0	HQ-002	Understanding of Quran	0+0
	Total Credits	**17**		**Total Credits**	**16**

SEMESTER-3			SEMESTER-4		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
MA-201	Advanced Calculus	3+0	MA-202	Applied Mathematics	3+0
ENG-201	Expository Writing	3+0	HU-201	Civics and Community Engagement	2+0
CE-231	Construction Engineering & Economics	2+0	CE-242	Soil Mechanics	2+1
CE-232	Computer Aided Civil Engg. Design & Graphics	1+2	CE-243	Fluid Mechanics	2+1
CE-233	Mechanics of Solids-I	2+1	CE-244	Structural Analysis-I	3+0-II
CE-234	Advanced Engg. Surveying & Geoinformatics	2+1	CE-245	Mechanics of Solids-II	2+1
HQ-003	Understanding of Quran	0+0	HQ-004	Understanding of Quran	0+0
	Total Credits	**17**		**Total Credits**	**17**

SEMESTER-5			SEMESTER-6		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
MA-301	Numerical Analysis	3+0	CE-361	Programming Simulation & Artificial Intelligence	2+1
CE-350	Occupational Health & Safety Management	1+0	CE-362	Highway and Traffic Engineering	2+1
CE-351	Engineering Hydrology	2+1	CE-363	Structural Analysis-II	3+0
CE-352	Reinforced Concrete Design	2+1	CE-364	Environmental Engineering	2+1
CE-353	Advanced Fluid Mechanics	`2+1	CE-365	Irrigation and Drainage Engineering	2+1
CE-354	Hazards and Disaster Management	1+0	CE-366	Advanced RC Design & Earthquake Engineering	2+1
CE-355	Geotechnical & Foundation Engineering	3+1	HQ-005	Seerat of the Holy Prophet Muhammad ﷺ	0+0
	Total Credits	**18**		**Total Credits**	**18**

SEMESTER-7			SEMESTER-8		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HU-107	Professional Ethics	2+0	MS-201	Entrepreneurship	2+0
MS-401	Project Management	1+1	SS-481	Contract Management and Law	2+0
CE-472	Research Methods & Digital Civil Engineering	1+1	CE-482	Architecture Design & Town Planning	1+1
CE-473	Hydraulics Engineering	2+1	CE-483	Quantity Surveying & Cost Estimation	2+1
CE-474	Transportation System Engineering	3+0	CE-484	Steel Structures	2+0
CE-475	Professional Field Training/Internship**	0+1	CE-485	Sustainable Structural Design & Retrofitting	2+1
CE-498	Final Year Project (Part-A)	0+3	CE-499	Final Year Project (Part-B)	0+3
	Total Credits	**16**		**Total Credits**	**17**

** Professional Field Training/Internship + Community Service can be conducted once after 4th & 6th Semester (Summer)
*** Internship (6-8 week),Survey Camp (2 weeks) are mandatory to fulfil the degree requirement.
**** Curriculum can be revised any time with approval of BoS based on AC/PEC/HEC recommendations.

DEPARTMENT OF

Petroleum & Gas Engineering

Prospectus
2024

www.nfciet.edu.pk

Engr. Dr. Sheraz Ahmad
Ph.D. (Oil & Gas Field Development Engineering)
(China University of Petroleum-Beijing, China)
M.Sc. (Petroleum Engineering)
Politecnico Di Torino, Torino, Italy
B.Sc. (Chemical Engineering)
NFC-IET, Multan
10 years experience of Research, Industrial
& Teaching

Head Department of Petroleum & Gas Engineering

Engr. M. Mubeen ur Rehman
Lecturer
M.Sc. (Petroleum & Gas Engg.)
Turkey
B.Sc. (Petroleum & Natural Gas
Engg.) MUET, Jamshoro
(8 Years of Teaching and Industry
Experience

Engr. Momna Khan
M.Sc. (Petroleum & Gas Engg.)
B.Sc. (Petroleum & Gas Engg.)
3 years' experience in Research,
& Teaching

Engr. Noor Muhammad
M.E. (Petroleum & Natural Gas Engg.)
B.E. (Petroleum & Natural Gas Engg.)
1.5 years' experience of Industry &
Teaching

Engr. Muhammad Omer
Lecturer
M.Sc. (Petroelum Engg.)
B.Sc. (Chem. Engg.)
10 years of teaching and
industry experience

Engr. Farzain ud Din Kirm
M.Sc. (Energy Engineering)
B.Sc. (Petroleum & Gas Engine
4 years' experience of Industry
Teaching

Engr. Tahir Zahoor
Lecturer
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)
10 years of teaching and
industry experience

Engr. Waseem Javed
Lecturer
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)
20 years of teaching and
industry experience

Introduction

A key source of energy is oil and natural gas. The efficient recovery of these resources requires Petroleum Engineers with a sound knowledge of fundamentals and the latest technological developments relevant to this field. Upstream petroleum engineers are always in demand. Petroleum Engineering involves the production of oil and gas (hydrocarbons) from subsurface reservoirs which requires engineering to bring it to the surface, estimate its value and extract it, in other words, finding oil and gas, drilling and producing it. The mission of the Petroleum Engineering education is to produce graduates who can not only satisfy the current needs of the country's petroleum industry but are also able to develop technologies indigenously. Preparing effective and efficient professionals through research and to develop the methods to utilize all the available natural resources in order to fulfill the energy needs of Pakistan in coming years. This will contribute to the socio-economic development of Pakistan and the region.

Why Petroleum Engineering?

- Lectures are accompanied by the practical study in fluid and reservoir rock laboratories, geodynamic lab work and field trips to both service company offices and drilling sites.
- Petroleum engineers are among the highest-paid engineers in the world.
- Petroleum engineers are amongst the best-traveled professionals in the world.
- Excellent teaching staff, many with extensive academic and industrial experience and strong links with the national industries and international institutes.

Career Opportunities

Petroleum Engineer as a qualified petroleum engineer you will be well rewarded financially in one of the highest-paid engineering jobs, enjoy extensive travel opportunities and, as one of the most technically challenging jobs, benefit from being part of a prestigious worldwide community of professionals.

Mission

The mission is to produce qualified and well-versed Petroleum Engineers equipped with fundamental sciences, able to find viable solutions, and skills to enter executive technical positions in energy and public sector industry and organizations, R & D Institutes, and academia.

Program Objectives

The program emphasizes building a strong base in Petroleum Engineering discipline and a detailed understanding of core areas with practical knowledge that comprehended with the use of professional software and laboratory practices. The program is competent to enhance capabilities for higher education and to fulfill the requirements of the petroleum industry. It is also oriented towards the

Outcome-Based Education (OBE). The main objectives are to develop:

I) To develop Petroleum engineers with comprehensive engineering and scientific knowledge and technical skills to solve complex engineering problems.

ii) To develop critical thinking in graduates so that they can identify, analyze, solve, and design new problems using modern tools and simulation techniques.

iii) To develop a sense of responsibility, effective communication skills, and the ability to work independently as well in a team.

iv) To develop ethical values, management qualities, and innovative ideas that can promote sustainable development among graduates to continue life-long learning to meet future challenges.

Facilities

Buildings:

The current buildings and facilities were developed with financial assistance (Rs. 67.33 million) of the Ministry of Science and Technology (MoST) government of Pakistan. The department has a well-furnished building constructed by spending about Rs. 12 million. It caters fully the requirements of students, faculty, and administration.

Laboratories:

The Petroleum Engineering Department is well equipped with laboratories and facilities that are very conducive to learning and research, which allows students and researchers to integrate the principles of petroleum engineering. Numerous are available to apply and practice the principles taught in traditional classwork through our specialized laboratories.

- Geology Lab
- Integrated Research Lab
- Petrophysics lab
- Computer Simulation Lab
- Drilling Engineering Lab
- Reservoir Engineering Lab

A. **Geology Lab**
- Mohs hardness tester
- More than 70 rock samples
- Automatic Planimeter
- Microscopes
- Brunton Compass
- Subsurface Geological Models

B. **Integrated Research**
- Thermo-gravimetric Analyzer (TGA)
- Differential Thermal Analyzer (DTA)
- CHNS Analyzer
- Inductive Coupled Plasma
- Ash Fusion Tester
- RGA-GC
- GC
- Auto bomb Calorimeter
- Furnace
- Oven
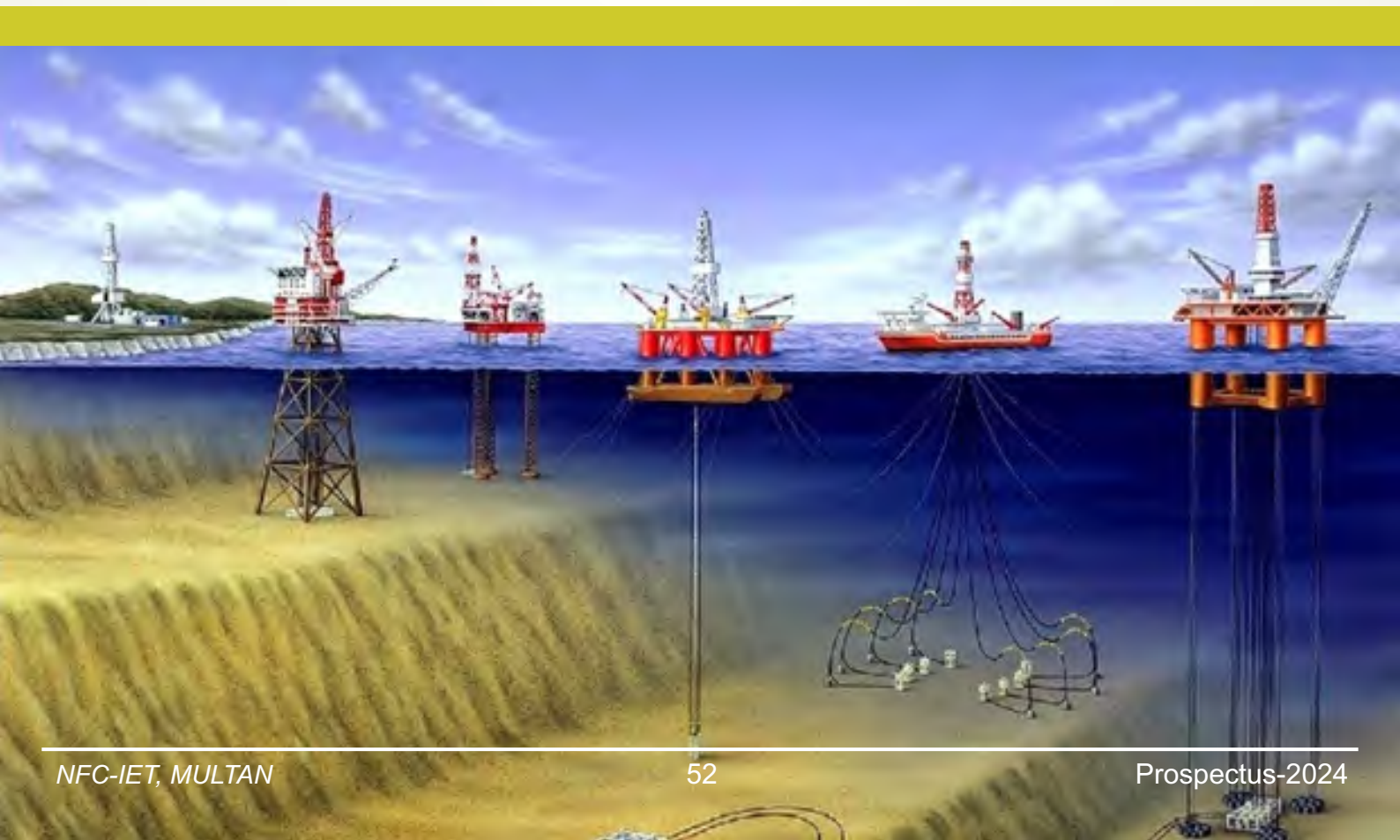
- Micro Digester
- Flue Gas Analyzer
- Laboratory Fume Hood

C. Petro-physics Lab
- Liquid Permeability Meter
- Gas Permeability Meter
- Gas Porosity Meter
- Artificial Core Synthesis apparatus
- Soxhlet Extractor
- Oven for Core
- Steady-stage Gas Permeameter
- Dean Stark Apparatus
- Capillary Pressure Testing System
- Resistivity Meter
- Liquid Surface Tension Analyzer

D. Drilling Engineering Lab
- Digital Viscometer
- Mud Filter Press
- Mud Balance
- Marsh Funnel
- Sand Content Kit
- pH Meter
- Retort Kit
- Core Cutter and Grinder
- Consistometer
- Multimixer

E. Reservoir Fluids Lab
- Aniline Point Tester
- Cloud Point and Pour Point
- Flash Point
- Vacuum Desiccator
- Moisture Analyzer

- Point Load Compressibility
- Open and Close Cup Weighing Balance

F. Allied Lab Facilities of Chemical and Civil Engineering
- Workshop Facilities
- Fluid mechanics lab
- Physics/Mechanics Lab
- Computer simulation Lab
- Instrumentation and Control Lab
- Electrical Lab
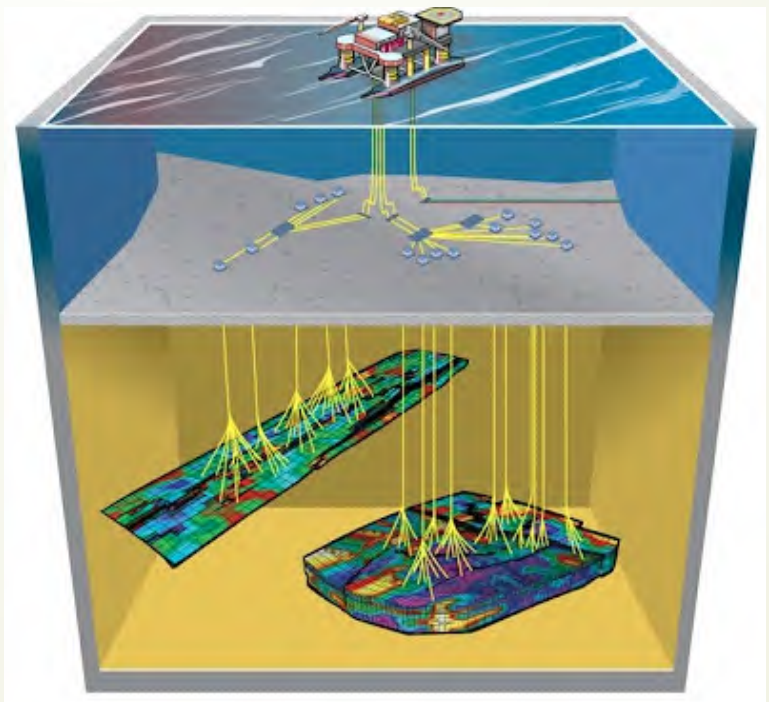
B.Sc. (Petroleum & Gas Engineering) CURRICULUM
SEMESTER SYSTEM

SEMESTER-1			SEMESTER-2		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
HQ-001	Understanding of Quran-I	0+0	HQ-002	Understanding of Quran-II	0+0
ENG-101	Functional English	3+0	QR-102	Quantitative Reasoning-II	3+0
PET-101	Fundamentals of Petroleum Engineering	3+0	NS-102	Applied Physics	2+1
HU-101	Islamic Studies	2+0	NS-108	Multivariable Calculus	2+1
HU-103	Logic and Critical Thinking	2+0	HU-102	Ideology & Constitution of Pakistan	2+0
QR-101	Quantitative Reasoning-I	3+0	Geo-107	Applied Geology and Structural Stratigraphy	3+1
ID-102	Workshop Practices	0+2	ID-103	Engineering Drawing	1+1
CS-101	Application of Information & Comm. Technology	2+1			
	Total Credits	**18**		**Total Credits**	**17**

SEMESTER-3			SEMESTER-4		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
HQ-003	Understanding of Quran-III	0+0	HQ-004	Understanding of Quran-IV	0+0
ENG-201	Expository Writing	3+0	HU-201	Civics & Community Engagement	2+0
SS-201	Sociology	2+0	MS-201	Entrepreneurship	2+0
ID-216	Fluid Mechanics	2+1	ID-219	Principles of Electrical Engineering	2+1
ID-218	Applied Thermodynamics	2+1	ID-220	Mechanics of Material	2+1
PG-203	Petroleum Geology and Geophysical Exploration	3+0	PG-202	Drilling Engineering-I	3+1
MA-103	Differential Equations	3+0	PG-205	Properties of Reservoir Fluid	2+1
	Total Credits	**17**		**Total Credits**	**17**

SEMESTER-5			SEMESTER-6		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
HQ-005	Understanding of Quran-V	0+0	HQ-006	Understanding of Quran-VI	0+0
CS-321	Applied Numerical Methods	2+1	MS-301	Project Planning & Management	2+1
ID-301	Environmental and Safety Management	3+0	PG-307	Well Logging	2+1
PG-304	Petrophysics	2+1	PG-308	Reservoir Engineering-I	3+1
PG-310	Natural Gas Processing & Pipeline Management	3+1	PG-309	Petroleum Production Engineering-I	3+0
PG-306	Drilling Engineering-II	3+1	ID-	Elective-I	2+1
	Total Credits	**17**		**Total Credits**	**16**

SEMESTER-7			SEMESTER-8		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
HQ-007	Understanding of Quran	0+0	HQ-008	Understanding of Quran-VIII	0+0
PG-411	Well Testing	3+1	PG-419	Field Development Planning	3+0
PG-412	Petroleum Production Engineering-II	3+1	PG-415	Principles of Enhanced Oil	3+1
PG-413	Reservoir Engineering-II	3+1	PG-417	Petroleum Economics	2+0
PG-	Elective-II	3+0	PG-416	Reservoir Simulation	3+1
PG-414	Final Year Project (Phase-I)	0+3	PG-418	Final Year Project (Phase-II)	0+3
	Total Credits	**18**		**Total Credits**	**16**

ELECTIVE-I			ELECTIVE-II		
Code	**Course Title**		**Code**	**Course Title**	
CH-326	Petroleum Refinery Engineering	2+1	PG-411	Reservoir Geomechanics	3+0
CH-325	Instrumentation and Process Control	2+1	PG-410	Unconventional Reservoirs	3+0
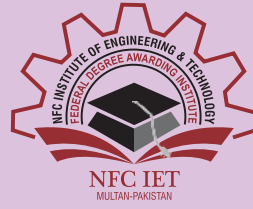
PLOs for all
Engineering Programs

Program's Learning Outcomes | PLOs

Prospectus-2022

PLOs for all Engineering Programs

Following are the Program Learning Outcomes for all Engineering Programs which were adopted based on recommendations given in PEC manual of accreditation 2014.

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

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

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

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

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

6. **The Engineer and Society:** An ability to apply reasoning informed by contextual knowledge to assesssocietal, health, safety, legal and cultural issues and the responsibilities relevant to professionalengineering practice and solution to complex engineering problems.

7. **Environment and Sustainability:** An ability to understand the impact of professional engineeringsolutions in societal and environmental contexts and demonstrate knowledge of and need forsustainable development.

8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms ofengineering practice.

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

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

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

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

NFC INSTITUTE OF ENGINEERING & TECHNOLOGY
FEDERAL DEGREE AWARDING INSTITUTE
NFC IET
MULTAN-PAKISTAN

DEPARTMENT OF
Computer Science

Prospectus
2024

www.nfciet.edu.pk

Dr. Naeem Aslam

Ph.D., MS (Computer Science)
21 years experience in software development, teaching and research
naeemaslam@nfciet.edu.pk

Head, Department of Computer Science

Mr. Muhammad Naman Ch.
MS (Computer Science)
20 years' of experience in Industry and Teaching
naman@nfciet.edu.pk

Miss Ujala Saleem
Ph.D. (In progress)
13 years' of experience in Industryand Teaching
ujsnfciet@gmail.com

Mr. Ahmad Naeem
Ph.D. (In progress)
MS (Computer Science)
9 years' of experience in Teaching
ahmad.naeem@nfciet.edu.pk

Mr. Muhammad Fuzail
Ph.D. (In progress)
MS (Computer Engineering)
12 years' of experience in Teaching, Research & Software Development
fuzail@nfciet.edu.pk

Mr. Mohibullah Khan
Ph.D. (In progress)
MS (Computer Science)
9 years' of experience in Teaching
muhibullah@nfciet.edu.pk

Mr. Muhammad Kamran Abid
Ph.D. (In progress)
MS (Computer Science)
11 years' of experience in Teaching
kamran.abid@nfciet.edu.pk

Mr. Asim Abdul Qadir
MS (Computer Science)
3 years' of experience in Teaching and Software Development
asimabdul.qadeer@nfciet.edu.pk

Ms. Anum Aftab
MS (CE)
8 years' of experience in Teaching and Research
anum.aftab@nfciet.edu.pk

Ms. Hira Saleem
MS (Computer Science)
5 years' of experience in Teaching and Software Development
hira.saleem@nfciet.edu.pk

Ms. Fatima Bukhari
MS (Computer Science)
3 years' of experience in
Teaching
fatima.bukhari@nfciet.edu.pk

Ms. Shaista Malik
MS (Computer Science)
5 years' of experience in
Teaching and research
shaista.malikr@nfciet.edu.pk

MISSION STATEMENT

The Department of Computer Science is dedicated to advancing the understanding and application of computing technology in today's fast-paced and ever-evolving digital world. We believe that computer science is at the forefront of solving some of the world's most complex problems and shaping the future.

Our mission is to provide students with a comprehensive education in computer science that combines theoretical foundations with practical experience. We strive to prepare students for careers in various fields, including software development, data science, cybersecurity, and artificial intelligence.

We are committed to fostering innovation and collaboration where students, faculty, and industry partners can collaborate to explore new ideas, test cutting-edge technologies, and bring about real-world impact. Our curriculum is designed to challenge students and inspire their creativity while providing a supportive and inclusive learning environment.

We believe that computer science has the power to transform our world for the better, and we are dedicated to producing graduates who are equipped to be leaders in this exciting and rapidly evolving field. Our ultimate goal is to ensure that our students are equipped with the skills, knowledge, and passion to shape the future of computing and positively impact society.

Degree Programmes Offered Under the Umbrella of Computer Science

    I.   **BS Computer Science**
    ii.   **BS Software Engineering**
    iii.   **BS Artificial Intelligence**

Computing Science is a dynamic field that studies computers, computing systems, and computational processes. The above-mentioned computing science degree programs provide students with the knowledge and skills to understand, design, and build computer systems, software, and applications. A computer science degree is ideal for students interested in technology, with strong problem-solving skills and a passion for working with computers. With the growing demand for technology professionals, any of the above computing science degrees can lead to a rewarding and lucrative career.

The curriculum covers a range of technical courses such as computer programming, algorithms, and software engineering, as well as related fields like mathematics and statistics. Graduates of computer science programs can pursue careers in various industries like software development, data analysis, and cybersecurity.

What can I do with a Computer Science Degree?

If you have studied computer science, you will have gained many technical and non-technical skills that are highly valued by employers, from leadership to programming. The increasing scope of computer science means you have plenty of choices in a wide range of highly specialized areas. These include financial organizations, management consultancy firms, software houses, communication companies, data warehouse centers, multinational companies, government agencies, universities, hospitals, etc.

1-   **Career Prospects for Computing Graduates:**
- IT Consultant
- Cyber Security Consultant
- Information Systems Manager
- Database Administrator
- Systems Analyst
- Games Developer
- Technical Writer
- Freelancer

2- Are Computer Science Graduates in demand?

Department of Computer Science at NFC-IET entertains students who possess the requisite intellectual caliber who are currently serving in the following organizations/ industries /software houses.

- Micro-Tech industry Pvt Ltd.
- Descon Engineering
- Softronicx PVT Ltd
- Pak Elektron limited
- Safe-city Project
- Nextbridge
- App technologies
- Software Technologies
- Punjab Information Technology Board
- MEPCO
- MUX Soft Tech
- Habib Bank
- Defense Housing Authority

3- Program Objectives :

The department of computer science missions by pursuing the following objectives:

- To teach students lifelong learning skills, which will allow them to successfully adapt to evolving technologies throughout their professional career.
- To prepare students for employment and advanced studies.
- To teach students effective teamwork, communication, and interpersonal skills
- To continue to pursue a high level of research productivity.

4- OBE Based Education (PLO)

The Bachelor of Science (B.S) degree in computer science is appropriate for students desiring a somewhat stronger concentration in the sciences, with more courses in computer science and computer engineering.

Recipients of a BS-Computer science degree at NFC-IET are expected to have the following skills and experiences:

Knowledge for Solving Computing Problems by applying knowledge of computing fundamentals, computing specialization, mathematics, science, abstraction, and conceptualization of computing models from defined problems and requirements

Skill for Problem Analysis by making the students learn Identifying, formulating, analyzing research literature, and solve complex computing problems reaching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines

Design/ Development of Solutions for complex computing problems, design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety keeping in view cultural, societal, and environmental considerations.

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

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

Communication: Communicate effectively with the computing community and with society at large about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions

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

Ethics: Understand and commit to professional ethics, responsibilities, and norms of professional computing practice

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

5- Duration of the Program at NFC-IET:
Bachelors in computer science (BSCS) this four–year degree program equips students with fundamental computing knowledge and the latest technology.

The department of computer science offers a four years program consisting of eight semesters. The program is designed to meet the growing need for computer science experts in the rapidly evolving 21st-century economy. This degree includes theory papers and laboratory practicals based on the mathematical and theoretical foundation of computing.

6- STEM(Science, Technology, Engineering, and Maths) and Computer Science:
Keeping the essential skills in view, the department of CS, at NFC-IET tries its best to inculcate the use of modern technology in students through seminars, conferences, and workshops that are conducted to boost up the problems sharing skills. These are:

- **Workshop – Graphic Design (by Mr. Noor Khan)**
The workshop was organized by the Head of the Department, Dr. Naeem Aslam. In which the resource person conducts two different sessions keeping the purpose and assigning of the content. The children from 'SOS village Multan' and inter-university students were catered. They came to know about advanced features of adobe photoshop and adobe illustrate.

- **FIA - Cyber Crime Seminar by Muhammad Ali Hashmi**
A seminar was conducted at NFC IET under the supervision of Dr. Naeem Aslam. The key features of the seminar were to aware the students and faculty about Cyber Crime, Cyber Laws, and how to keep oneself safe among the latest emerging social platforms.

- **Huawei - Cyber Security Seminar by Malik Muhammad Jawad**
A seminar was conducted at the CS department under the Headship of Dr. Naeem Aslam. The key features of the seminar were to aware the students about the malware, ransomware attacks, data privacy, Cyber laws, and high-demand emerging technologies in these domains.

- **e-Rozgaar**
In collaboration with Govt. of Punjab and PITB a State of the art lab 100 Computer System is established to train students for freelancing and new ways of online earning. The lab is fully equipped with high-speed internet and a co-

working environment. The vision for this collaboration among PITB and NFCIET is to reduce unemployment and drive economic growth in Pakistan by increasing the inflow of foreign currency. This project is under the e-Rozgaar program of Govt. of Punjab.

One of the major objectives of this project is to provide training opportunities to youth for self-employment using internet-based freelancing. Under the e-Rozgaar program, our center has graduated around 500 students in the recent sessions that are earning handsome amounts through freelancing. Many events have been organized for the awareness of e-Rozgaar and freelancing opportunities. The students have earned online more than 24000 USD during and after e-Rozgaar training since the start of this program.

- **NAVTTC**

In collaboration with the Fedral Government under the vision of Prime Minister Kamiyab Nojvaan Program, NAVTTC has started its partner training program with NFC IET. It is free of cost technical training program for unemployed and unskilled youth.

It has three domains of training programs designed such that to train the students to get them self-employed. Specifically for the first intake, there are three domains in which students are enrolled.

i. Blockchain Programming

ii. Artificial Intelligence (Machine Learning &

Deep Learning)

iii. Mobile/Web Development

DETAIL OF NAVTTC COURSES

Batch	Session	Courses	No. of Enrolled students	Total
1	2020	Blockchain Programming	50	185
		Artificial Intelligence	60	
		CIT Mobile Application & Web Development	75	
2	2021	Artificial Intelligence	25	50
		CIT Mobile Application & Web Development	25	
3	2022	CIT Cyber Security	25	125
		Industrial Automation (PLC)	25	
		Chemical Supervisor	25	
		CIT MobileApplication& Web Development	50	
4	2024	Advanced Python	40	80
		AI	20	
		Block Chain	20	

7- Real-World Experience:

Real-world experience and project-based learning are crucial for students and help develop the lifelong skills they used to succeed. Giving students a chance to test their activities before learning to serve is optimum. The department of CS at NFC-IET organizes different field trips and industrial tours for the students to broaden their practical knowledge. In addition to this, students avail themselves of the opportunities to serve as internees at different renowned institutes and departments, such as PITB, Software houses, and

multinational companies.

On-Campus Recruitment Test & Interviews

The organizations mentioned below are in contact with the Department of Computer Science for recruiting young professionals of Computer Science from NFC IET Multan. In the recent past tests and interviews were conducted by these organizations and many of our graduates were recruited even before completion of their degree. Many of our students that have not completed their degrees are doing paid internships in these organizations.

DETAIL OF COMPUTER LABS

Lab Name	Number of Systems	Processor	Graphics	Discrete (External)	Internal Memory (RAM)	External Memory (HDD/SSD)	LED	Security
FYP Lab Room 109	50	Core i7 8th Gen	Intel HD Graphics 630	NVIDIA GeForce GT 730, 2GB	16 GB	256 GB SSD	24"	Lock slot; Trusted Platform Module (TPM)
CS Lab 1 Room 111	50	Core i7 7th Gen	Intel HD Graphics	NVIDIA GeForce GT 730, 2GB	16 GB	1 TB HDD	22"	Lock slot; Trusted Platform Module (TPM)
CS Lab 2 Room 112	30	Core i5 7th Gen	Intel HD Graphics 3000	-	8 GB	1 TB HDD	22"	Lock slot; Trusted Platform Module (TPM)
CS Lab 3 Room 114	30	Core i7 10th Gen	Intel HD Graphics 3000	-	8 GB	256 GB SSD	19"	Lock slot; Trusted Platform Module (TPM)
Research Lab Room 103	8	Core i7 7th Gen	Radeon Pro 560, 4GB	-	16 GB	1 TB SSD	21.5"	Kensington Lock Slot
E-Rozgar Room 209	100	Core i3	-	-	8 GB	256 GB SSD	15.6"	-
CS Lab. Room 209	50	Core i7 10th Gen.	-	-	8 GB	256 GB SSD	21.5"	Lock slot; Trusted Platform Module (TPM)

BS COMPUTER SCIENCE CURRICULUM
SEMESTER SYSTEM

SEMESTER-1			SEMESTER-2		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-001	Understanding of Quran	0+0	HQ-002	Understanding of Quran	0+0
CS-101	Application of ICT	2+1	CC-121	Object Oriented Programing	3+1
CC-111	Programming Fundamentals	3+1	CC-122	Digital Logic Design	3+1
NS-102	Applied Physics	2+1	QR-102	Quantitative Reasoning-II	3+0
QR-101	Quantitative Reasoning-I	3+0	HU-102	Ideology & Constitution of Pakistan	2+0
HU-101	Islamic Studies	2+0	`HU-103	Professional Practices	2+0
ENG-101	Functional English	3+0	ES-121	Financial Accounting	3+0
MT-011	Basic Mathematics	0+0			
	Total Credits	**18**		**Total Credits**	**18**

SEMESTER-3			SEMESTER-4		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-003	Understanding of Quran	0+0	HQ-004	Understanding of Quran	0+0
CC-211	Computer Organization & Assembly Language	2+1	CC-221	Operating Systems	3+1
CC-212	Data Structures	3+1	CC-222	Database Systems	3+1
CC-213	Information Security	2+1	CS-221	Theory of Automata	3+0
SS-201	Economics	2+0	MT-221	Linear Algebra	3+0
ENG-201	Expository Writing	3+0	MS-201	Entrepreneurship	2+0
MT-211	Multivariate Calculus	3+0	HM-201	Civics & Community Engagement	2+0
	Total Credits	**18**		**Total Credits**	**18**

SEMESTER-5			SEMESTER-6		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-005	Understanding of Quran	0+0	HQ-006	Understanding of Quran	0+0
CC-311	Computer Networks	2+1	CC-321	Analysis of Algorithms	3+0
CC-312	Software Engineering	3+0	CS-321	Compiler Construction	2+1
CC-313	Artificial Intelligence	2+1	CS-322	Parallel & Distributed Computing	2+1
CS-311	Computer Architecture	2+1	CS-323	HCI & Computer Graphics	2+1
CE-311	Web Technologies	2+1	CE-321	Mobile Application Development-I	2+1
MT-311	Probability & Statistics	3+0	ENG-321	Technical & Business Writing	3+0
	Total Credits	**18**		**Total Credits**	**18**

SEMESTER-7			SEMESTER-8		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-007	Understanding of Quran	0+0	HQ-008	Understanding of Quran	0+0
CC-411	Final Year Project-I	0+2	CC-421	Final Year Project-II	0+4
CS-411	Advanced Database Management Systems	2+1	CE-421	Software Testing & Quality Assurance	2+1
CE-411	Numerical Analysis	2+1	CE-422	Cyber Security	2+1
CE-412	Mobile Application Development-II	2+1			
CE-413	Advanced Programming	2+1			
FE-401	Field Experience/Internship	3+0			
	Total Credits	**17**		**Total Credits**	**10**

SEMESTER 4-ADCS

Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-003	Understanding of Quran	0+0			
AE-201	Advanced Database Lab	0+2			
AE-202	Web Technologies Lab	1+2			
AE-203	Mobile Application Development Lab	1+2			
AE-204	Advanced Programming Lab.	1+2			
AE-205	Cyber Security Lab	1+2			
MS-201	Entrepreneurship	2+0			
HM-201	Civics & Community Engagement	2+0			
	Total Credits	**18**			

BS SOFTWARE ENGINEERING CURRICULUM
SEMESTER SYSTEM

SEMESTER-1			SEMESTER-2		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-001	Understanding of Quran	0+0	HQ-002	Understanding of Quran	0+0
CS-101	Application of ICT	2+1	CC-121	Object Oriented Programming	3+1
CC-111	Programming Fundamentals	3+1	CC-122	Digital Logic Design	3+1
NS-102	Applied Physics	2+1	QR-102	Quantitative Reasoning-II	3+0
QR-101	Quantitative Reasoning-I	3+0	HU-101	Islamic Studies	2+0
HU-102	Ideology & Constitution of Pakistan	2+0	HU-103	Professional Practices	2+0
ENG-101	Functional English	3+0	ES-121	Financial Accounting	3+0
MT-011	Basic Mathematics	0+0			
	Total Credits	**18**		**Total Credits**	**18**

SEMESTER-3			SEMESTER-4		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-003	Understanding of Quran	0+0	HQ-004	Understanding of Quran	0+0
CC-211	Computer Organization & Assembly Language	2+1	CC-221	Operating Systems	3+1
CC-212	Data Structures	3+1	CC-222	Database Systems	3+1
CC-213	Information Security	2+1	CC-223	Software Engineering	3+0
SS-201	Economics	2+0	MT-221	Linear Algebra	3+0
ENG-201	Expository Writing	3+0	MS-201	Entrepreneurship	2+0
MT-211	Multivariate Calculus	3+0	HM-201	Civics & Community Engagement	2+0
	Total Credits	**18**		**Total Credits**	**18**

SEMESTER-5			SEMESTER-6		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-005	Understanding of Quran	0+0	HQ-006	Understanding of Quran	0+0
CC-311	Computer Networks	2+1	CC-321	Analysis of Algorithms	3+0
CC-313	Artificial Intelligence	2+1	SC-321	Software Construction & Development	2+1
SC-311	Software Requirement Engineering	2+1	SC-322	Parallel & Distributed Computing	2+1
SC-312	Software Design & Architecture	3+0	SE-321	Mobile Application Development	2+1
SE-311	Web Engineering	2+1	SE-322	Object Oriented Analysis & Design	2+1
MT-311	Probability & Statistics	3+0	ENG-321	Technical & Business Writing	3+0
	Total Credits	**18**		**Total Credits**	**18**

SEMESTER-7			SEMESTER-8		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-007	Understanding of Quran	0+0	HQ-008	Understanding of Quran	0+0
CC-411	Final Year Project-I	2+1	CC-421	Final Year Project-II	0+4
SC-411	Software Quality Engineering	2+1	SE-421	Software Verification & Validation	2+1
SC-412	Software Project Management	2+1	SE-422	Software Re-Engineering	2+1
SE-411	Advance Database Management	2+1			
SE-413	HCI & Computer Graphics	2+1			
FE-401	Field Experience/Internship	3+0			
	Total Credits	**17**		**Total Credits**	**10**

BS ARTIFICIAL INTELLIGENCE CURRICULUM
SEMESTER SYSTEM

SEMESTER-1			SEMESTER-2		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-001	Understanding of Quran	0+0	HQ-002	Understanding of Quran	0+0
CS-101	Application of ICT	2+1	CC-121	Object Oriented Programming	3+1
CC-111	Programming Fundamentals	3+1	CC-122	Digital Logic Design	3+1
NS-102	Applied Physics	2+1	QR-102	Quantitative Reasoning-II	3+0
QR-101	Quantitative Reasoning-I	3+0	HU-101	Islamic Studies	2+0
HU-102	Ideology & Constitution of Pakistan	2+0	HU-103	Professional Practices	2+0
ENG-101	Functional English	3+0	ES-121	Financial Accounting	3+0
MT-011	Basic Mathematics*	0+0			
	Total Credits	**18**		**Total Credits**	**18**

* Deficiency Course

SEMESTER-3			SEMESTER-4		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-003	Understanding of Quran	0+0	HQ-004	Understanding of Quran	0+0
CC-211	Computer Organization & Assembly Language	2+1	CC-221	Operating Systems	3+1
CC-212	Data Structures	3+1	CC-222	Database Systems	3+1
CC-213	Information Security	2+1	CC-223	Artificial Intelligence	3+0
SS-201	Economics	2+0	MT-221	Linear Algebra	3+0
ENG-201	Expository Writing	3+0	MS-201	Entrepreneurship	2+0
MT-211	Multivariate Calculus	3+0	HM-201	Civics & Community Engagement	2+0
	Total Credits	**18**		**Total Credits**	**18**

SEMESTER-5			SEMESTER-6		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-005	Understanding of Quran	0+0	HQ-006	Understanding of Quran	0+0
AI-311	Programming for AI	2+1	CC-321	Analysis of Algorithms	3+0
AI-312	Machine Learning	2+1	CC-322	Software Engineering	3+0
AI-313	Knowledge Representation & Reasoning	2+1	AI-321	Artificial Neural Networks & Deep Learning	2+1
AE-311	HCI & Computer Graphics	3+0	AE-321	Digital Image Processing	2+1
CC-311	Computer Networks	2+1	AE-322	Data Mining	2+1
MT-311	Probability & Statistics	3+0	ENG-321	Technical & Business Writing	3+0
	Total Credits	**18**		**Total Credits**	**18**

SEMESTER-7			SEMESTER-8		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
HQ-007	Understanding of Quran	0+0	HQ-008	Understanding of Quran	0+0
CC-411	Final Year Project-I	0+2	CC-421	Final Year Project-II	0+4
AI-411	Computer Vision	2+1	AI-421	Parallel & Distributed Computing	2+1
AE-411	Natural Language Processing	2+1	AE-421	Swarm Intelligence	2+1
AE-412	Reinforcement Learning	2+1	AE-422	Knowledge Based Systems	2+1
FE-401	Field Experience/Internship	3+0			
	Total Credits	**14**		**Total Credits**	**13**

NFC INSTITUTE OF ENGINEERING & TECHNOLOGY
FEDERAL DEGREE AWARDING INSTITUTE
NFC IET
MULTAN-PAKISTAN

DEPARTMENT OF
Architecture
Design

Prospectus
2024

www.nfciet.edu.pk

Ar. Syeda Mahwish Zahra
(M-PCATP)
Assistant Professor
M. Arch. NED UET Karachi, 2014
B. Arch. Karachi University, 2006
16 years' of experience in Teaching &
8 years of field experience

Ar. Rashid Adil
(M-PCATP)
Assistant Professor
B.Arch. UET Lahore, 1973
15 years teaching experience
46 years field experience

Ar. Muhammad Ashfaq
(M-PCATP)
Assistant Professor
M. Arch. UET Lahore 2000
B Arch. NCA Lahore, 1986
7 years teaching experience
35 years of field experience

Ar. Anum Aleha
(M-PCATP)
Assistant Professor
MS (Env. Design), AIOU, 2021
B. Arch. DUET
8 years teaching experience

Ar. Mohsin Iqbal Deo
(M-PCATP)
Assistant Professor
MS (Env. Design), AIOU, 2022
B. Arch. UOG, Gujrat 2014
5 years teaching experience
9 years field experience

Ar. M. Israr Ali Mirza
(M-PCATP)
Lecturer
B. Arch. BNU Lahore, 2018
5 years teaching experience
3 years field experience

Ar. Alishba Saleem
(M-PCATP)
Lecturer
B. Arch. NFC-IET, Multan, 2018
2 year teaching experience
6 years field experience

Ar. Sidra
(M-PCATP)
Lecturer
MS (Env. Design), AIOU, (on going)
B. Arch. NFC-IET, Multan, 2019
2 year teaching experience
3.5 years field experience

Faculty from Field/Practice

1. Ar. Shahid Akbar
   M-PCATP, Classic Design Studio
2. Ar. Usama Farooq
   M-PCATP, Aakif and Usama Associates
3. Ar. Ali Hassan
   M-PCATP, Design Indulge
4. Ar. Sikandar
   M-PCATP, Design Indulge
5. Ar. Aqeel Rehman
   M-PCATP, SWDS

Architecture Design at NFC-IET

Multan is a showcase for recent regeneration as well as rich historic context. Its history and age are characterized by the various names, rulers, invasions, cultures and religions, which span over a period of three thousand years. From the pre-Islamic era to modern times, culture of Multan has always been rich with literary and academic knowledge, which has caused it to be the center of learning throughout its history. The city recognizes the value of high-quality design, together with innovative and pragmatic approaches to resolving practical issues.

The Bachelor's degree of Architecture at NFC-IET Multan, introduces the various sub fields for architects. The scope of the program is broad. In five years,

students will learn all the basic skills and techniques combining theory and design with latest technological advances. Students's own creativity and spatial insight play a major reole in this. Various design projects, both individually and in groups, will help them to learn about the way technology, culture and the living environment interact with each other. Students will develop analytical and creativity skills along-with spatial aptitude and will benefit from the practical expertise of specialists alongside research-active lectures, who provide a rich and stimulating environment in which to study architecture. We combine traditional lecture-based teaching with workshop and design studio sessions.

Project learning is the basis of architecture education, and the studio is where this learning takes place. B. Architecture graduates are highly valued for their confidence and creativity, and benefit from our strong links with national and international architectural practices.

Core Topics in Architecture Design

Architecture education needs are different for different regions within Pakistan. Our curriculum provides a broad outline and framework of knowledge areas with a built-in-flexibility. List of core topics are as under:

- Architecture Design Studio

- History of Architecture
- Materials & Construction
- Structures for Architects
- Building Conservation
- Energy and Environment
- Urban Design
- Landscape Design
- Technical Studies
- Participatory Design
- Internship

First Year

The first year of B. Arch education at NFC-IET Department of Architecture is designed to integrate our students with a work-intensive, shared space learning environment (architecture design studio which is the key component of any architectural pedagogy. Through individual and group projects, students are encouraged to enhance their creativity, critical thinking abilities and communication skills. The foundation and fine arts studios are further supplemented through courses in design theory linked with how design has historically been responsive towards shifts in history, culture and philosophy.

2nd & 3rd Year Formative Level:

The basic design skills are further honed in the next two years of architectural education with focus on site, context, solar orientation, scale, functional

relationships and design concept for small to medium scale buildings dominating the discourse in the four studios on offer. However, the prospective architects need to ground their ideas in architectural reality through a sound under-standing of structures, tectonics, materials and construction details which is imparted through lecture courses that complement the architecture studios.

4th & 5th Year Consolidation Level:

The later years of architectural education at NFC-IET focus on urban and philosophical issues related to the field of architecture. Identity through architecture, sense of ownership and properiety, role of traditions in the face of impending globalization, conservation/adaptive re-use of historical buildings, urban growth patterns and holistic policy making are some of the key questions

that future leading professionals must seek an answer to; and the rigorous course structure connecting studios to architecture history, archaeology and preservation, research, participatory design and documentation techniques ensures that our prospective graduates are best suited to take on these complex concerns and are able to present their designs and research to multiple viewers in a didactic and eloquent manner.

We at NFC-IET believe that only when an architect is able to integrate the abstract with the tangible in a harmonious manner then architecture is able to express its values to the fullest. It is with this thought in mind that we expect our graduates to envelop their responses to complex philosophical question in well-articulated buildings that are thoughtful in their relationship with the immediate urban context, the occupant/user and are clear in their utilization of structure, material, services and engineering systems.

Departmental Resources
Computer Graphics Lab

The computer graphics lab is located in Department of Architecture. The facility has a total capacity of 50 students and is the best equipped in the NFC-IET. The lab is utilized for many training programs conducted for students. The computers are fully optimized to run latest versions of drafting, rendering, image & video editing software. Lab is further supplemented by the following equipments such as plotter, multimedia podium rostrum, sound system, internet facility.

Departmental Library

Departmental library is equipped with Architectural books, national and international magazines and journals. The modern collection is superbly stocked and it is kept up to date with regular purchases. We aim to support undergraduate-level study in all the principal subjects studied by NFC-IET under graduates.

Extracurricular Activities

Your education goes well beyond your coursework. Extracurricular activities can form a vital part of your experience here at NFC-IET, creating unique opportunities for learning.

Industrial tours, site visits and educational tours are organized to enhance the exposure of students. Workshops on various subjects are also often conducted in the department.

Applicants

We actively seek candidates for the undergraduates Program who share our view that architecture is a cultural-and not only professional - form of human activity, enquiry and knowledge. Students also need to display critical reasoning, holistic thinking, basic background knowledge and skills pertaining to the professional as well as genuine willingness to want to work, learn and grow in a setting that demands near-constant levels of engagement, exchange and communication with the world's most diverse, active and intelligent architectural community.

Employment Prospects

Architects can work in different public and private sectors. These include:
- Private practice or Design consultancy
- Academia
- Building Projects
- Research Institutes
- Conservation and Rehabilitation Projects

Accreditation

NFC-IET is the first institute recognized by Pakistan Council of Architects and Town Planners (PCATP) in South Punjab Region. The accreditation is in process.

Eligibility Criteria

- Intermediate FA, FSC and DAE (Architecture) with 60% aggregate marks.
- Minimum 60% Marks in departmental aptitude test (DAT), interview and drawing test. Candidates are also advised to bring in their drawing portfolio at the time test & interview.
- Port-folio: Student must showcase skills, mandatory for Architecture candidates.

BACHELOR IN ARCHITECTURE DESIGN CURRICULUM
SEMESTER SYSTEM

SEMESTER-1			SEMESTER-2		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
Arch-101	Foundation Studio-I	1+5	Arch-102	Foundation Studio-II	1+5
Arch-111	History of Architecture-I	2+0	Arch-112	History of Architecture-II	2+0
Arch-151	Visual Communication-I	0+2	Arch152	Visual Communication-II	0+2
HU-101	Islamic Studies/Ethics	2+0	HU-102	Ideology & Constitution of Pakistan	2+0
ENG-101	Functional English	3+0	NS-105	Ecology	2+1
HU-106	History of Ideas-I	2+0	CS-101	Applications of Info. & Comm. Tech. (ICT)	2+1
QR-101	Quantitative Reasoning-I	3+0	QR-102	Quantitative Reasoning-II	3+0
HQ-001	Understanding of Quran	0+0	QR-002	Understanding of Quran	0+0
	Total Credits:	**20**		**Total Credits**	**21**

SEMESTER-3			SEMESTER-4		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
Arch-201	Architectural Studio-III	1+7	Arch-202	Architectural Studio-IV	1+7
Arch-231	Materials & Construction-I	1+1	Arch-232	Materials & Construction-II	1+1
Arch-241	Structures for Architects-I	2+0	Arch-242	Structures for Architects-II	2+0
Arch-211	History of Architecture-III	2+0	Arch-212	History of Architecture-IV	2+0
SS-205	Anthropology	2+0	HU-201	Civics & Community Engagement	2+0
ENG-201	Expository Writing	3+0	MS-201	Entrepreneurship	2+0
HQ-003	Understanding of Quran	0+0	HQ-004	Understanding of Quran	0+0
	Total Credits:	**19**		**Total Credits**	**18**

SEMESTER-5			SEMESTER-6		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
Arch-301	Architectural Studio-V	1+7	Arch-302	Architectural Studio-VI	1+7
Arch-311	Theory of Architecture-I	2+0	Arch-312	Theory of Architecture-II	2+0
Arch-331	Materials & Construction-III	1+1	Arch-313	Architecture in Pakistan	2+0
Arch-341	Building Services & Systems-I	1+1	Arch-312	Building Services & Systems-II	1+1
Arch-351	Digital Tools for Architects-I	1+1	Arch-352	Digital Tools for Architects-II	1+1
Arch-314	Sustainable Design	2+0	Arch-315	Architectural Photography	1+1
HQ-005	Understanding of Quran	0+0	HQ-006	Understanding of Quran	0+0
	Total Credits:	**18**		**Total Credits**	**18**

SEMESTER-7			SEMESTER-8		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
Arch-401	Architectural Studio-VII	1+7	Arch-482	Architectural Studio-VIII (Focus Studio)	2+8
Arch-411	Urban Design	2+0	Arch-112	Architectural Research Methods	1+0
Arch-431	Surveying and GIS for Architects	2+1	Arch-132	Specifications and Quantity Surveying	2+0
Arch-403	Project Management and BIM	2+1	Arch-413	Environmental Impact Assessment	2+0
Arch-404	Landscape Design	1+1	Arch-414	Building Conservation and Retrofitting	2+1
HQ-007	Understanding of Quran	0+0	HQ-008	Understanding of Quran	0+0
	Total Credits:	**18**		**Total Credits**	**19**

SEMESTER-9			SEMESTER-10		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
Arch-501	Thesis Design-I	2+6	Arch-502	Thesis Design-II	0+8
ENG-501	Technical English and Creative Writing	2+0	Arch-530	Building Laws and Professional Practice	2+0
Arch-503	Internship	3+0	Arch-512	Adv. Architectural Presentation Techniques-II	0+2
Arch-504	Participatory Design	2+0	HQ-010	Understanding of Quran	0+0
Arch-511	Adv. Architectural Presentation Technique-I	0+2			
HQ-009	Understanding of Quran	0+0			
	Total Credits:	**17**		**Total Credits**	**12**

* 6 weeks Internship is compulsory in Summer Break after 4th year as a pre-requisite for promotion to Final Year

NFC INSTITUTE OF ENGINEERING & TECHNOLOGY
FEDERAL DEGREE AWARDING INSTITUTE
NFC IET
MULTAN-PAKISTAN

Bu Ali Sina Block

Department of Business Administration

DEPARTMENT OF

Business Administration Prospectus 2024

www.nfciet.edu.pk

Dr. Shahzadi Sattar
PhD (Management & Organizational Behaviour)
20 years of experience in Teaching
shahzadi.sattar@nfciet.edu.pk

**Head,
Department of Business Administration**

Dr. Sana-ur-Rehman
Ph.D. (International Business)
MBA
25 years' of experience in
Industry and Teaching
dr.sana.ur.rehman@nfciet.edu.pk

Dr. Zohaib Razzaq
Ph.D. (Management Science &
Engineering)
04 years of experience in
teaching
zohaib.razzaq@nfciet.edu.pk

Dr. Shoaib Asim
Ph.D. (Management Sciences &
Engineering)
shoaib.asim@nfciet.edu.pk

Ms. Sahar Hayat
Ph.D. (In progress
MS/MBA-II (Marketing)
08 years of experience in
teaching
sahar.hayat@nfciet.edu.pk

Mr. Haroon A. Chughtai
M.Phil (Business Adminstration)
L.L.B.
14 years of experience in
teaching and industry
haroon.chughtai@nfciet.edu.pk

Mr. Hammad Raza Sahoo
M.Phil (Business Administration)
10 years of experience in teaching
and industry
hammad.sahoo@nfciet.edu.pk

Ms. Raisham Hayee
MS (Business Administration
Specialization in Finance)
06 years of experience in teaching
raisham.hayee@nfciet.edu.pk

Mr. Mohsin Jamal
MBA
BBA (Hons) in Finance
03 years exprience in teaching
mohsin.jamal@nfciet.edu.pk

Introduction

Business Education at NFC-IET intend to impart broad knowledge of management and communicational skills in order to develop business decision making capabilities among future managers and executives.

Core focus of our business programme is to develop critical thinking among students enabling them to gain strategic orientation to ensure organizational success and competitiveness. Students learn at NFC-IET essential management skills and conceptual framework necessary to apply them successfully in the field of Management and associated areas such as Marketing, Human Resource Management, and Finance.

Our students choose a specialization of their own interests, which further facilitate them to develop managerial skills in a particular sector. Moreover, the internship and industrial tours provide real-time organizational exposures to our students.

Vision-Missions

- ❖ Pursue Excellence in Education & Research
- ❖ Develop curricula to meet National and Economy needs
- ❖ Develop a Vivid interface between Academia and Industry
- ❖ Enhance he Capacity Building of Faculty
- ❖ Produce Graduate Possessing:
  - ▪ High Professional Competence
  - ▪ Analytical Approach towards Problem Solving
  - ▪ Organizational & Managerial skills
  - ▪ Spirit of Nation Building, Humanistic Outlook, & Ethical Rectitude

Aims and Objectives

The BBA Programme aims at developing graduates with through of the contemporary business environment in which the public and private sectors mainly operate. It helps students to develop decision making ability in difficult business situations.

Job opportunities / Future Prospects

As our course structure basically focuses on detailed study of business administration's foundational, functional and decisional areas, that's why our graduates are ready to meet the ever changing diverse challenges of the organizations in the region. Completion of four-year BBA programme allows students to start their careers as an Industrial Production Manager, Procurement Manager, Operational Manager, Purchasing Manager, Public Relation Officer, Quality Assurance Control Manager, facility Manager, Organizational Consultant, Supply Chain Manager or an Entrepreneur. Moreover, after BBA programme graduates may continue their further higher education at post-graduation level such as MBA or MS within the country or abroad.

Admission Eligibility

An individual holding a Higher Secondary School Certificate from a Pakistani Board or an equivalent certificate from any other Pakistani / foreign recognized institution is eligible for admission to Bachelor of Business Administration (BBA) Program of study at NFC-IET Multan.

BACHELOR OF BUSINESS ADMINISTRATION CURRICULUM
SEMESTER SYSTEM

SEMESTER-1			SEMESTER-2		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
ENG-101	Functional English	3+0	BBA-103	Financial Accounting-II	3+0
BBA-101	Principles of Management	3+0	HU-103	Critical Thinking & Logic	2+0
HU-102	Ideology and Constitution of Pakistan	2+0	HU-101	Islamic Studies	2+0
CS-101	ICT	2+1	QR-102	Quantitative Reasoning-II	3+0
QR-101	Quantitative Reasoning-I	3+0	BBA-104	Principle of Marketing	3+0
BBA-102	Financial Accounting-I	3+0	ECO-201	Microeconomics	3+0
HQ-001	Understanding of Quran	0+0	HQ-002	Understanding of Quran	0+0
	Total Credits	**17**		**Total Credits**	**16**

SEMESTER-3			SEMESTER-4		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
SS-204	Introduction to Psychology	3+0	BBA-204	Marketing Management	3+0
ENG-201	Expository Writing	3+0	HU-201	Civics and Community Engagement	2+0
ECO-202	Macro Economics	3+0	NS-201	Environmental Management System	2+1
BBA-201	Introduction to Business Finance	3+0	MS-201	Entrepreneurship	2+0
BBA-202	Introduction to Human Resource Management	3+0	BBA-205	Financial Management	3+0
BBA-203	Business and Labour Laws	3+0	SS-209	Introduction to Sociology	2+0
HQ-003	Understanding of Quran	0+0	HQ-004	Understanding of Quran	0+0
	Total Credits	**18**		**Total Credits**	**15**

SEMESTER-5			SEMESTER-6		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
BBA-301	Cost and Management Accounting	3+0	BBA-306	Invention in Job Skills	3+0
BBA-302	Principles of Supply Chain Management	3+0	BBA-307	Business Ethics	3+0
BBA-303	Organizational Behavior	3+0	BBA-308	Consumer Behavior	3+0
BBA-304	Principles of Commercial Banking	3+0	BBA-309	Management Information System	3+0
ECO-203	Major Issues in Pakistan Economy	3+0	BBA-310	E-Commerce and Digital Marketing	3+0
BBA-305	Production and Operation Management	3+0	BBA-311	Statistical Inference	3+0
HQ-005	Understanding of Quran	0+0	HQ-006	Understanding of Quran	0+0
	Total Credits	**18**		**Total Credits**	**18**

SUMMER SEMESTER		
Code	Course Title	Credit Hrs.
BBA-312	Internship	3+0
	Total Credits	**03**

SEMESTER-7			SEMESTER-8		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
BBA-401	Business Research Method	3+0	BBA-404	Business Policy and Strategy	3+0
BBA-402	Total Quality Management	3+0	BBA-405	Project Management	3+0
BBA-403	International Business Management	3+0		Elective-III	3+0
	Elective-I	3+0		Elective-IV	3+0
	Elective-II	3+0	BBA-421	Capstone Project	3+0
HQ-007	Understanding of Quran	0+0	HQ-008	Understanding of Quran	0+0
	Total Credits	**15**		**Total Credits**	**15**

BACHELOR OF BUSINESS ADMINISTRATION CURRICULUM 2024
ELECTIVE COURSES

ELECTIVE COURSES OF MARKETING					
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
BBA-406	International Marketing	3+0	BBA-409	Industrial Marketing	3+0
BBA-407	Services Marketing	3+0	BBA-410	Distribution Management	3+0
BBA-408	Marketing Research	3+0			

ELECTIVE COURSES OF FINANCE					
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
BBA-411	Financial Institution	3+0	BBA-414	Principles of Auditing	3+0
BBA-412	Corporate Finance	3+0	BBA-415	International Finance	3+0
BBA-413	Financial Statement Analysis	3+0			

ELECTIVE COURSES OF HUMAN RESOURCE MANAGEMENT					
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
BBA-416	Performance & Compensation Management	3+0	BBA-419	Leadership & Team Management	3+0
BBA-417	Industrial Relations	3+0	BBA-420	Recruitment & election	3+0
BBA-418	Training & Development	3+0			

HEC REQUIREMENTS FOR BBA (HONS) PROGRAM			
Sr. No.	Types of Courses	No. of Courses	Credit Hours
1.	Major	28	84
2.	General	12	30
3.	Core	02	06
4.	Inter Disciplinary	05	15
	Total:	**47**	**135**

DEPARTMENT OF
Fashion
Design

Prospectus
2024

www.nfciet.edu.pk

Ms. Nazish Huma Khan
Lecturer/Hod
M.Phil Visual Arts, IUB
BS Communication Design
MCA-BZU, Multan.
11 years of teaching experience
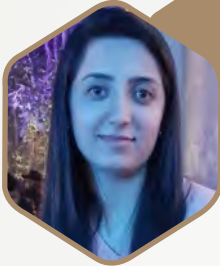
Ms. Momina Rasheed
Lecturer
BS Fashion Designing
3 years of teaching experience
momina.rasheed@gmail.com

Ms. Kiran Ijaz
Lecturer
BS Fashion Designing
1 year of teaching experience
kiranijaz137@gmail.com

Ms. Hamna Azam
Lecturer
MS in Fine Arts & Design
BS in Fashion Design & Technology
2 years of teaching experience
Hamnaazam2727@gmail.com

Mission

Nuturing individuals to transform potential into excellence, creativity and commercial savvy for success in the fashion industry.

Program Introduction

Make your creative designs stand out. The NFC Bachelor of Fashion Design provides you with the right skills to create innovative designs whether it be for the fashion shows of high couture or ready to wear garments. Participants gain the skills and knowledge necessary to work as a fashion designer and understand all aspects of the industry. Through challenging and studio-based projects, they can able to conceptualize their design, develop drawing skills, learn about texture, color and fabric, pattern making and garment construction, as they work towards turning raw materials into a unique finished product.

The degree focuses on the balance between theoretical and industry-relevant fashion design as you research and develop an innovative fashion design practice. Students are taught subjects related to fashion illustration, pattern making and cutting, sewing and stitching. The discipline put emphasis on strong communication and interpersonal skills to raise confident individuals, who can share their vision clearly and develop a better understanding of Fashion design.

I-   Graduates have the ability to produce designs in Pret-o-Porter and Haute Couture.

II-   Graduates can be able to work in the industry for import and export business in the garment as this domain is producing industry-oriented Designer as well.

III-   Graduates can be able to provide services as a fashion accessories designer.

IV-   Graduates can be able to work in the field of arts as a Textile Artist, Fabric Installation Artist, Digital Arts Sculptur, Pattern Maker and Fashion Illustrations.

V-   Graduates can have the ability to perceive designs and able to lead designs houses and studios.

VI-   Graduates can be able to work as a Communication Designer particularly for the textile sector and the ability to work as a Marketing expert and Visual

Merchandiser.

VII- Graduates are given the intense knowledge of Digital Technology and can work as computer Aided Designer in the market.

VIII- Graduates can have the ability to work interdisciplinary tasks in a team.

IX- Graduates can have the ability to play its role as a good citizen with code, conduct of society and religion.

Objective

The program focuses on the core objectives of providing the students with an integrated understanding and specialized perspective on the application of culture and professional practice in the fashion design industry. Throughout the degree course, the students are challenged to test their abilities from concept development to final execution of their design. Subjects like fashion illustration, pattern making and cutting, sewing and stitching help students to learn creative ways of developing their unique style in the field of fashion design. We aim to produce graduates who are creative, imaginative, innovative, versatile and competitive. This aim is achieved by:

I- Producing graduates who have acquired theoretical and practical knowledge of the fashion industry.

II- Producing graduates with critical and analytical problem-solving skills for the fashion design industry.

III- Preparing students for a broad range of related employment opportunities.

IV- Preparing students to show aesthetics and functionality at every phase of design sampling, marketing and merchandising.

V- Preparing students for quality research in advanced study related to the fashion design discipline.

VI- Preparing students to handle and run fashion brands.

VII- Preparing the students to learn the theoretical study of fashion design and its technical aspects.

VIII- To generate human resources in the field of design with the intense knowledge of technology and command on the creative process specifically to the sectors related to Fabric and Textiles to attire the look of the costume.

IX- To give knowledge of Research so they can apply it in further studies and advancement in the practical field.

X- To teach the students about the moral and Ethical values of the society so they can contribute well to designers and Human beings.

Career Paths

After formal education graduates the ability to work as a Fashion Designer, Stylist, Illustrator and Costume Designer in the Fashion Industry. Also one can opt for career paths as a fashion designer, product developer, fashion manager, design manager, fashion merchandiser and fashion brand owner. Other diverse careers you can choose from after completing a Bachelor's degree in Fashion Design are:

I- Fashion Designer (Clothing, Footwear, Accessory, Costume)

II- Fashion Merchandiser

III- Fashion Marketing

IV- PR Specialist

V- Fashion Journalist

VI- Fashion Product Manager

VII- Fashion Production and Management

VIII- Advertising

IX- Fashion Technology

Admission Criteria

1- Intermediate/A-Level with a minimum of 50% marks.

2- A-Level with (minimum three subjects, no subsidiary) and O-Level with 8-subjects including five compulsory subjects are required.

3- Intermediate students awaiting results are also eligible for provisional admission. They should attach the attested copy of the part-I result card and also part-II roll number slips of their respective boards.

4- A-level students awaiting results are required to submit the statement of entry. However provisional admission, if granted will not be confirmed without equivalence certificate issued by IBCC with 50% marks.

5- High school diploma holders must submit IBCC equivalence.

BACHELOR IN FASHION DESIGN CURRICULUM
SEMESTER SYSTEM

	SEMESTER-1			SEMESTER-2	
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
HQ-001	Understanding of Quran	0+0	HQ-002	Understanding of Quran	0+0
ENG-101	Functional English	3+0	HU-101	Islamic Studies	2+0
HU-102	Ideology & Constitution of Pakistan	2+0	FA-153	Basic Design-II	0+2
FA=1-2	Basic Drawing-I	0+2	CS-154	Digital Communication	0+2
CS-101	Applications of Information & Com. Tech.	2+1	DES-155	History of Art & Design	2+0
HU-103	History of Culture & Civilization-I	2+0	NS-105	Ecology	2+1
FA-106	Sculpture	0+2	DES-157	Fundamental of Design-II	0+2
DES-107	Fundamental of Design-I	1+1	QR-102	Quantitative Reasoning-II	3+0
QR-101	Quantitative Reasoning-I	3+0			
	Total Credits	**19**		**Total Credits**	**16**

	SEMESTER-3			SEMESTER-4	
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
HQ-003	Understanding of Quran	0+0	HQ-004	Understanding of Quran	0+0
FD-202	Flat Pattern-I	0+1	FD-252	Mathematics of Pattern-I	1+1
FD-203	Developments in Fashion Costume-I	0+2	FD-253	Digital Fashion-II	0+1
SEW-204	Sewing-I (Machine Sewing & Hand Sewing)	0+3	SEW-254	Sewing-II (Machine Sewing & Hand Sewing)	0+2
FD-205	Digital Fashion-I	0+1	MS-201	Entrepreneurship	2+0
FD-206	History of Costume-I	1+0	FD-256	History of Costume-II	1+0
DRP-207	Draping-I	0+2	DRP-257	Draping-II	0+2
FD-209	Human Anatomy & Portrait Drawing	0+2	FD-258	Developments in Fashion Costume-II	0+2
TD-208	Textile Basics & Fibers	2+0	TD-259	Textile Design-I	1+2
SS-201	Sociology	2+0	HU-201	Civics & Community Engagement	2+0
ENG-201	Expository Writing	3+0			
	Total Credits	**19**		**Total Credits**	**17**

	SEMESTER-5			SEMESTER-6	
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
HQ-005	Understanding of Quran	0+0	HQ-006	Understanding of Quran	0+0
FD-301	Mathematics of Pattern-II	1+2	FD-351	Mathematics of Pattern-III	1+2
FD-302	Fashion Design Studio-I	1+1	FD-352	Fashion Design Studio-II	1+1
SEW-303	Sewing-III	0+2	SEW-353	Sewing-IV	0+3
TD-304	Digital Fashion-III	0+1	FD-354	Digital Fashion-IV	0+1
FD-305	History of Costume & Fashion-III	1+0	FD-355	History of Costume and Fashion-IV	1+0
DRP-306	Draping-III	0+2	DRP-356	Draping-IV	0+2
TD-307	Textile Design-II	1+2	TD-357	Textile Design-III	1+2
HU-308	Fashion Marketing & Merchandising	2+0	HU-358	Costing & Planning	1+0
	Total Credits	**16**		**Total Credits**	**16**

	SEMESTER-7			SEMESTER-8	
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
HQ-007	Understanding of Quran	0+0	HQ-008	Understanding of Quran	0+0
FD-402	Mathematics of Pattern-IV	0+2	ENG-451	English (Dissertation)	2+0
FD-403	Fashion Design Studio-III	0+2		Collection/Final Project Product	0+10
SEW-404	Sewing-V	0+2	FD-452	Collection: Pattern	0+2
DRP-405	Draping-V	0+2	FD-453	Collection: Fashion Design Studio-IV	0+2
TD-406	Textile Design-IV	0+2	SEW-454	Collection: Sewing-VI	0+2
INT-407	Internship	0+3	DRP-455	Collection: Draping-VI	0+2
FD-408	Photography	1+2	TD-456	Collection: Textile Design-V	0+2
FD-401	Research Methods	1+0			
	Total Credits	**17**		**Total Credits**	**12**

NFC INSTITUTE OF ENGINEERING & TECHNOLOGY
FEDERAL DEGREE AWARDING INSTITUTE
NFC IET
MULTAN-PAKISTAN

Law College
Department of Criminology

Justice Alvin Robert Cornelius
Block

DEPARTMENT OF
Criminology

Prospectus
2024

www.nfciet.edu.pk

Mr. Ghulam Abbas Khizer Khar
M.Phil Criminoogy, (L.L.B.), MBA

Dr. Ahmed Saad
Ph.D. (Sociology) China

Mr. Ali Raza Shamsi
M. Phil (English & Linguistics)

Mr. Touqeer Altaf
M. Phil (Criminology)

Syed Haider Raza
M. Phil (Criminology)

Mr. Rana Junaid Aslam
M. Phil (Criminology)

Why Study Criminology

With a bachelor of science in criminology, you'll form a better understanding of the historical and contemporary applications of law enforcement, as well as the environments, behaviors, and influences that contribute to criminal acts and behavior. You'll be prepared to enter a career in law enforcement as a detective, public administration as a social services provider or criminal law as a defense attorney.

What is a Degree in Criminology

In a bachelor of science in criminology program, you'll focus your studies on the psychology of crime. You'll learn why criminals commit acts of crime, form an understanding of how be process of imprisonment discourse future criminal acts. You'll

study criminology and law to form a better understanding of the overall legal and justice systems in law enforcement and criminal sentencing.

A bachelor of science is a flexible degree that prepares you for work in a variety of law enforcement and judicial positions. Graduates may go into law enforcement, working as police officer, detectives, and crime scene investigators. With additional education, they may also find work later in their careers as criminal psychologists, defense attorneys and prosecutors, corrections counselors, or judges. They may also focus on criminal profiling, working for government agencies like the FIA etc.

What Courses Would I Take For A Major in Criminology?

- Introduction to Criminology
- Sociology of Law
- Social Problems
- Sociology of Violence
- Elite and Organized Crime
- Social Psychology
- Drugs and Society
- Juvenile Delinquency

What Jobs Can you Get with A Degree in Criminology?

Professionals in the forensic Science and criminal profiling fields are becoming increasingly necessary in identifying and capturing criminals who've left little evidence when committing crimes. As such, experienced criminologists are expected to be more in demand to assist with criminal investigations and criminal trials, the application of law enforcement, and in criminal and correctional counseling roles. Criminology majors should be competitive for open roles in federal agencies and as forensic scientists.

bachelors in Criminology will have a typical length of 4 years in a full time schedule.

BACHELOR IN CRIMINOLOGY CURRICULUM
SEMESTER SYSTEM

SEMESTER-1			SEMESTER-2		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
ENG-101	Functional English	3+0	HU-102	Ideology and Constitution of Pakistan	2+0
QR-101	Quantitative Reasoning-I	3+0	ENG-103	Communication Skills	3+0
HU-101	Islamic Studies	2+0	QR-102	Quantitative Reasoning-II	3+0
HU-109	Philosophy	3+0	CR-124	Introduction to Law	3+0
SS-126	Sociology of Deviance	3+0	NS-105	Ecology	2+1
CR-116	Introduction to Criminology	3+0	CS-101	Applications of Computer & Comm. Tech.	2+1
HQ-001	Understanding of Quran	0+0	HQ-002	Understanding of Quran	0+0
	Total Credits	**17**		**Total Credits**	**17**

SEMESTER-3			SEMESTER-4		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
ENG-201	Expository Writing	3+0	ENG-202	Technical Report Writing	3+0
HU-108	Gender Studies	3+0	HS-221	Org. Behavior & Human Resource Mgt.	3+0
SS-201	Sociology	3+0	CR-223	Juvenile Delinquency	3+0
SS-214	Media Studies	3+0	CR-224	Criminal Psychology	3+0
HU-201	Civics and Community Engagement	2+0	SS-216	Islamic Perspective on Crime & Punishment	3+0
CR-115	Theoretical Perspectives on Crime & Criminals	2+0	MS-201	Entrepreneurship	2+0
HQ-003	Understanding of Quran	0+0	HQ-004	Understanding of Quran	0+0
	Total Credits	**16**		**Total Credits**	**17**

SEMESTER-5			SEMESTER-6		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
CR-311	Applied Criminology	3+0	CR-321	Patterns of Crime	3+0
CR-312	Criminal Justice System	3+0	CR-322	Criminal Law PPC	3+0
CR-313	Penology	3+0	CR-323	Forensic Methodology	2+1
CR-314	Crime and Security	3+0	CR-324	Police and Policing	2+1
CR-315	Correctional Institution	2+1	CR-325	Victimology	3+0
HQ-005	Understanding of Quran	0+0	HQ-006	Understanding of Quran	0+0
	Total Credits	**15**		**Total Credits**	**15**

SEMESTER-7			SEMESTER-8		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
CR-416	Internship/Project	4+0	CR-421	Thesis	6+0
CR-413	Criminal Law CRPC	3+0	CR-422	Community Justice & Crime Prevention	2+1
CR-414	Organized Crime & Money Laundering	3+0	CR-423	Methods of Criminal Investigation	3+0
CR-322	Research Methodology	3+0	CR-424	Drug Abuse and Human Rights	3+0
CR-415	Cyber Crime	3+0	CR-425	Violence and Terrorism	3+0
HQ-007	Understanding of Quran	0+0	HQ-008	Understanding of Quran	0+0
	Total Credits	**16**		**Total Credits**	**18**

NFC INSTITUTE OF ENGINEERING & TECHNOLOGY
FEDERAL DEGREE AWARDING INSTITUTE
NFC IET
MULTAN-PAKISTAN

DEPARTMENT OF
Environmental Science

Prospectus
2024

www.nfciet.edu.pk

MS. ROBIA ARSHAD
M.Phil. (Environmental Sciences)
10 years experience in the field of teaching&
research
robia.arshad@nfciet.edu.pk

Head, Department of Environmental Sciences

Prof. Dr. Tahir Imran Qureshi
Ph.D. (Environmental Engg.)
25 years experience in the
field of teaching & research
tahirimran@nfciet.edu.pk

Mr. Sikandar Raza
M. Phil (Mathematics)
21 -years experience of
teaching

Engr. Muhammad Asif
MS (Civil Engg.)
02 years experience
of teaching

Mr. Abdullah Shah
M. Phil (Env. Science)
01 year experience
of teaching

Mr. Abdullah Zamad
M. Phil (Env. Science)
01 year experience
of teaching

Mr. Arbaz Madni
M. Phil (Env. Science)
01 year experience
of teaching

BS Environmental Science

Introduction

Environmental Science has been recognized as the science of sustainable development on earth. It is an emerging science of interdisciplinary academic fields that integrate physical and biological sciences to the study of environment. Environmental scientists bring a systematic approach to the analysis of environmental problems. They work on subjects like understanding of earth processes, development of alternate energy systems, pollution control and mitigation measures, cleaner production, environmental management systems, natural resources management, solid waste management and global climatic changes among others.

Importance

Achieving sustainable development by the coming years should be a top most agenda of Pakistan strategic planning to give birth to an environmentally sound and healthy nations. Introducing green economy, biodiversityand ecosystem services, conservation of natural resources and environmental governance are required to be incorporated in the management strata of the country to declare Pakistan an environmentally prosperous society. This entails a pressing need to start educating our young generation in environmental discipline and courses. Environmental professionals are on high demand in the world since countries have made mandatory employment of these professionals in order to meet international standards of environmental safeguards in their organizations and businesses.

Environmental Science at IET

Having realization of the fact that environmental discipline being a prerequisite for shaping a sustainable world, NFC-IET started BS-4 year Environmental Science Program (BSES) in 2011. IET having highly qualified faculty of Chemical Engineering and Basic Sciences Department with a blend of industrial and teaching experience proved a good supporting faculty to conduct environmental courses. Environmental Professionals trained by IET are already serving at good positions in many organizations of national and international worth.

Aims & Objectives

The overreaching aim of BS Environmental Science is to develop human resources in meeting environmental challenges and issues with a broader objective of achieving sustainable development of the earth.

Job Opportunities

Completion of the course will allow graduates to enter as Environmental Professionals with excellent career options in industries, commerce and public and private sector services. This course prepares graduates to joing organizations as Environmental Scientist and Manager, Environmental Auditor, Environmental Officer, Consultant & Advisor, Academician and Researcher. The program also enables graduates to continue their higher studies (Post-graduate Program) in environment and other relevant disciplines like Health, Safety and Environmental Management, Environmental Law, Environmental Policy & Management, Energy & Environment etc.

Program Structure

BS Environmental Sciences will lead to develop an understanding of earth systems, processes, problems and possible solutions. The program will be of 04 years duration consisting of 08 semesters. Students have to

WHAT CAN YOU DO WITH AN ENVIRONMENTAL SCIENCE MAJOR?

MOST COMMON JOBS

ENVIRONMENTAL SCIENTIST
- Median annual wage: $69,400
- Common entry-level degree: Bachelor's/Master's degree
- Likelihood that robots will take your job: 3%

COLLEGE PROFESSOR
- Median annual wage: $76,360
- Common entry-level degree: Master's degree
- Likelihood that robots will take your job: 3%

HIGH SCHOOL SCIENCE TEACHER
- Median annual wage: $59,170
- Common entry-level degree: Bachelor's degree
- Likelihood that robots will take your job: 1%

SPECIALIZED/UNIQUE JOBS

ENVIRONMENTAL ENGINEER
- Median annual wage: $86,800
- Common entry-level degree: Bachelor's/Master's degree
- Likelihood that robots will take your job: 1.8%

ENVIRONMENTAL CONSULTANT
- Median annual wage: $69,400
- Common entry-level degree: Bachelor's degree
- Likelihood that robots will take your job: 3%

FORESTER
- Median annual wage: $60,120
- Common entry-level degree: Bachelor's degree
- Likelihood that robots will take your job: 0.8%

OTHER, NON-TRADITIONAL JOBS

See article for job descriptions

ENVIRONMENTAL REPORTER
TOXICOLOGIST
ENVIRONMENTAL LAWYER
MARINE BIOLOGIST
CLIMATOLOGIST
FISH AND GAME WARDEN

complete minimum 126 credit hours of which 123 credit hours are for course work and 03 credit hours for project as per HEC requirement.

The program is designed to provide a strong base for students by offering courses from other discipline including Mathematics, Biology, Chemistry, Statistics, Economics, Earth Sciences, Law and Management. Student are also equipped with computing, research and presentation skills during their course work.

Laboratories:
- General Purpose Chemistry Lab.
- Environmental Lab.
- Microbiology & Wastewater Treatment Lab.
- GIS & Remote Sensing Lab.
- Physics Lab.
- Computer Lab.

Eligibility:
F.Sc. (Pre-Engineering/Pre-Medical) or equivalent with 45% aggregate marks.

PROTECTING OUR PLANET STARTS WITH YOU

BIKE MORE DRIVE LESS

reduce REUSE recycle
Cut down on what you throw away. Follow the three "R's" to conserve natural resources and landfill space.

choose sustainable seafood
Learn how to make smart seafood choices at www.FishWatch.gov.

Trees provide food and oxygen. They help save energy, clean the air, and help combat climate change.
PLANT A TREE

EDUCATE
When you further your own education, you can help others understand the importance and value of our natural resources.

CONSERVE WATER
The less water you use, the less runoff and wastewater that eventually end up in the ocean.

-SHOP- WISELY
Buy less plastic and bring a reusable shopping bag.

Don't send chemicals into our waterways.
Choose nontoxic chemicals in the home and office.

Volunteer!
Volunteer for cleanups in your community. You can get involved in protecting your watershed too!

Long-lasting light bulbs - ARE A - BRIGHT IDEA
Energy efficient light bulbs reduce greenhouse gas emissions. Also flip the light switch off when you leave the room!

BS ENVIRONMENTAL SCIENCES CURRICULUM
SEMESTER SYSTEM

SEMESTER-1			SEMESTER-2		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
ES-101	Introduction to Environmental Science	3+0	ES-102	Environmental Profile of Pakistan	3+0
NS-104	Essentials of Biology	2+1	ES-103	Environmental Physics	3+0
QR-101	Quantitative Reasoning-I	3+0	QR-102	Quantitative Reasoning-II	3+0
ENG-101	Functional English	3+0	CS-101	ICT	2+1
HU-108	History of Culture and Civilization	2+0	ES-104	Environmental Pollution	3+0
HU-101	Islamic Studies/Ethics	2+0	HU-102	Ideology and Constitution of Pakistan	2+0
HQ-001	Understanding of Quran	0+0	HQ-002	Understanding of Quran	0+0
	Total Credits	**16**		**Total Credits**	**17**

SEMESTER-3			SEMESTER-4		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
ENG-201	Expository Writing	3+0	ES-202	Environmental Chemistry	3+0
SS-201	Sociology	2+0	ES-204	Environmental Management System	3+0
ES-201	Biodiversity and Conservation	3+0	ES-206	Environmental Microbiology	2+1
ES-203	Natural Resource Management	3+0	ES-208	Fundamentals of Ecology	2+1
ES-205	Introduction to Earth Science	2+1	MS-201	Entrepreneurship	2+0
ES-207	Climatology	3+0	HU-201	Civics & Community Engagement	2+0
HQ-003	Understanding of Quran	0+0	HQ-004	Understanding of Quran	0+0
	Total Credits	**17**		**Total Credits**	**16**

SEMESTER-5			SEMESTER-6		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
ES-301	Environmental Toxicology	2+1	ES-302	Analytical Techniques in Environmental Science	1+2
ES-303	Health and Environmental Economics	3+0	ES-304	Climate Change	3+0
ES-305	Soil Conservation & Environmental Monitoring	2+1	ES-306	Environmental Law and Governance	3+0
ES-307	GIS & Remote Sensing	2+1	ES-308	Environmental Biotechnology	3+0
ES-309	Affordable and Clean Energy	3+0	ES-310	Sustainable Urban Planning and SDGs	3+0
ES-311	Environmental Biochemistry	3+0	ES-312	Research Methods & Digital Env. Science	3+0
HQ-005	Understanding of Quran	0+0	HQ-006	Understanding of Quran	0+0
	Total Credits	**18**		**Total Credits**	**18**

SEMESTER-7			SEMESTER-8		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
ES-401	Environmental Impact Assessment	3+0	ES-402	Disaster Risk Management	3+0
ES-403	Water & Wate Water Treatment	3+0	ES-404	Pollution Control Technologies	3+0
ES-405	Solid and Industrial Waste Management	3+0	ES-406	Occupational Health and Safety	3+0
ES-407	Field Experience/Internship	0+3	ES-408	Capstone Project	0+3
HQ-007	Understanding of Quran	0+0	HQ-008	Understanding of Quran	0+0
	Total Credits	**12**		**Total Credits**	**12**

DEPARTMENT OF
Bio-Medical Engineering Technology

Prospectus
2024

www.nfciet.edu.pk

NFC IET
MULTAN-PAKISTAN

NFC INSTITUTE OF ENGINEERING & TECHNOLOGY
FEDERAL DEGREE AWARDING INSTITUTE

Dr. Abdul Mannan
Ph.D. (Electrical Engineering)
M.Sc. (Electrical Engineering)
B.Sc. (Electrical Engineering)
23 years experience in teaching, research
& industry
Email: mannan@nfciet.edu.pk

Head, Biomedical Engineering Technology

Dr. Sumbal Ayyaz
Lecturer
PhD (Biochemistry)
MPhil (Biochemistry)
13 years experience in
teaching, & research
sumbalayyaz@nfciet.edu.pk

Mr. Muhammad Waqas Khalid
Lecturer
MS (Biomedical Sciences)
BS (Medical Lab Technology)
10 years experience in
teaching, & research
waqaskhalid@nfciet.edu.pk

Ms. Faiza Rao
Lecturer
MS (Bio-Medical Engg.)
BS (Bio-Medical Engg.)
3 years experience in
teaching, & Industry
faiza.rao@nfciet.edu.pk

Ms. Ayesha Shaukat
Lab. Technologist
MS (Bio-Medical Engg.)
BS (Bio-Medical Engg. Technology)
3 years experience in
teaching, & Industry
ayesha.shaukat@nfciet.edu.pk

Introduction:

Biomedical engineering is one of the fastest-growing sectors in global health innovation and product development. In 2013, Forbes, a famous American magazine, placed biomedical engineering at the top of their "most valuable majors" list of university programs. The United States ranks the field first with USD 140-180 billion/year industry, which is more than one third of world market. Medical devices and technologies are growing at a rate of 10 per cent annually. Internationally, the medical devices market is a USD 327.7 billion industry whereas Canada ranks this field at number nine with USD 6.8 billion in estimated sales revenue.

Bio-Medical engineering applies the basic principles of engineering to the development of innovative methods for the diagnosis and treatment of diseases and injuries as well as playing a crucial role in the advancement of medical devices and technologies. It is an interdisciplinary subject, which combines wide-ranging scientific knowledge with technological processes and engineering skills to provide systems for important real world applications.

An undergraduate program in Biomedical Engineering Technology provides a strong foundation in basic sciences, mathematics, engineering and life sciences. The educational foundation, coupled with

opportunities for extracurricular experiences, research/internship opportunities, teaching, advising and mentoring, provides a broad pathway for students to pursue a wide variety of post-graduate opportunities such as:

- Utilization and enhancement of the engineering and biological training to solve problems regarding health and health care based on ethically sound principles

- Development of leadership in the respective career in biomedical engineering and clinical practices

- Indulge in lifelong learning by continue education in graduate or professional school or by means of opportunities for professional training

- Graduates are trained to apply knowledge of biosciences, mathematics, and engineering in practical domains

- Biomedical engineers/technologists are able to design and conduct experiments as well as to analyze and interpret data

- They can lay out a system to meet desired needs with realistic constraints such as environmental ethical, health safety

- Graduates are professionals capable to function effectively on multidisciplinary teams

Keeping in view the gap between supply and demand of biomedical engineering/technology professionals, BSc (Biomedical Engineering Technology) program at NFC Institute of Engineering and Technology was commenced in 2016. The program is maiden in Southern Punjab region, providing students deep theoretical and practical understanding of the key areas with the help of qualified teachers from academia & industry and on state of the art biomedical engineering equipment.

Program Education Objectives (PEOs):

- Apply biomedical engineering knowledge to identify and address technical and societal problems.

- Be able to take initiative and/or develop innovative ideas for technological and professional growth keeping in view their societal and environmental impacts.

- Learn continuously and work effectively as a team lead in a multidisciplinary environment while demonstrating interpersonal and managerial skills with ethical responsibilities.

Accreditation:

All batches of the program are accredited by the National Technology Council (NTC), Pakistan. Accreditation with NTC grants graduates a license to enter in their professional career either through employment or with their own relevant business.

Curriculum:

Keeping in view the regularly updating market requirements, curriculum for BSc Biomedical Engineering Technology program is being regularly updated right from its commencement in 2016. Presently it is as per the latest guidelines of Higher Education Commission and National Technology Council. Advanced courses are included according to the changing field requirements at both national and international levels. These courses provide quantitative training, emphases on problem-solving and design the phenomena from the molecular to the system level.

Laboratories:

Department has recently equipped following 08 state-of-the-art labs with modern equipment:

i-   Human Physiology & Anatomy lab

ii-   Computer lab

iii-   Biomechanics lab

iv-   Biomaterials lab

v-   Electrical lab

vi-   Bio Physics lab

vii-   Bio Chemistry lab

Current Research Areas: Current research in this field encourages emerging areas by prominently discussing a wide range of topics, including but not limited to Biomechanics, Bio monitoring, Biomaterial engineering, Bioelectrical engineering, Biochemical engineering, Tissue engineering, Computational genomics and proteomics, Pharmaceutical engineering, Bio photonics, Medical devices, Novel Surgical Instruments, Medical imaging, Implants, Bionics, Clinical engineering, and Rehabilitation engineering.

Specialized Tracks in Biomedical Engineering Technology:

Neural Engineering:

This area applies fundamental and applied engineering techniques to help solve basic and clinical problems in neuroscience. At a fundamental level, neural engineering seeks a better understanding of the behavior of individual neurons, their growth, signaling mechanisms between neurons, and how populations of neurons produce complex behavior. Obtaining such information improves understanding of the communication that occurs between the various parts of the nervous system and the brain. Such knowledge can lead to the development of replacement parts and other treatments for impaired neural systems.
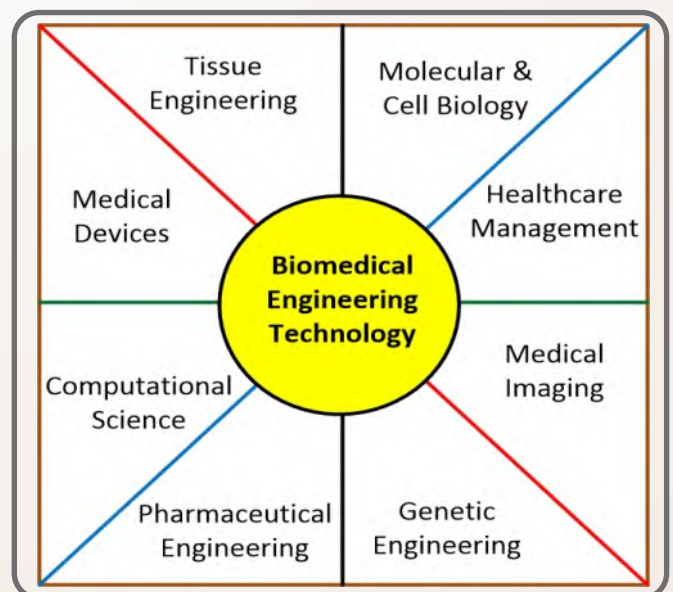
Medical Imaging:

Medical imaging encompasses a wide range of technologies (including MRI, CT, ultrasound, PET, etc.) that permit visualization of the internal structure and function of the human body. Medical imaging is an essential part of today's health care, biomedical research, and drug development, and is one of the most important contributions that engineering has made to patient care. Cutting-edge areas of medical imaging include development of new types of imaging, new hardware and computer software, and new ways of using, visualizing, and analyzing medical images.
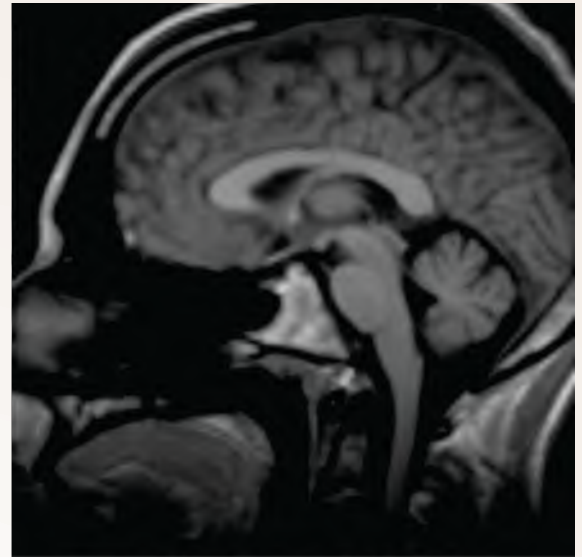
Cell and Tissue Engineering:

This area seeks to understand and attack biomedical problems at the microscopic level and use such knowledge to engineer replacement tissues and organs from individual cells. Knowledge of anatomy, biochemistry and the mechanics of cellular and sub-cellular structures is needed to understand disease processes and to target interventions. Armed with such knowledge, new technologies have been, or are being, developed.
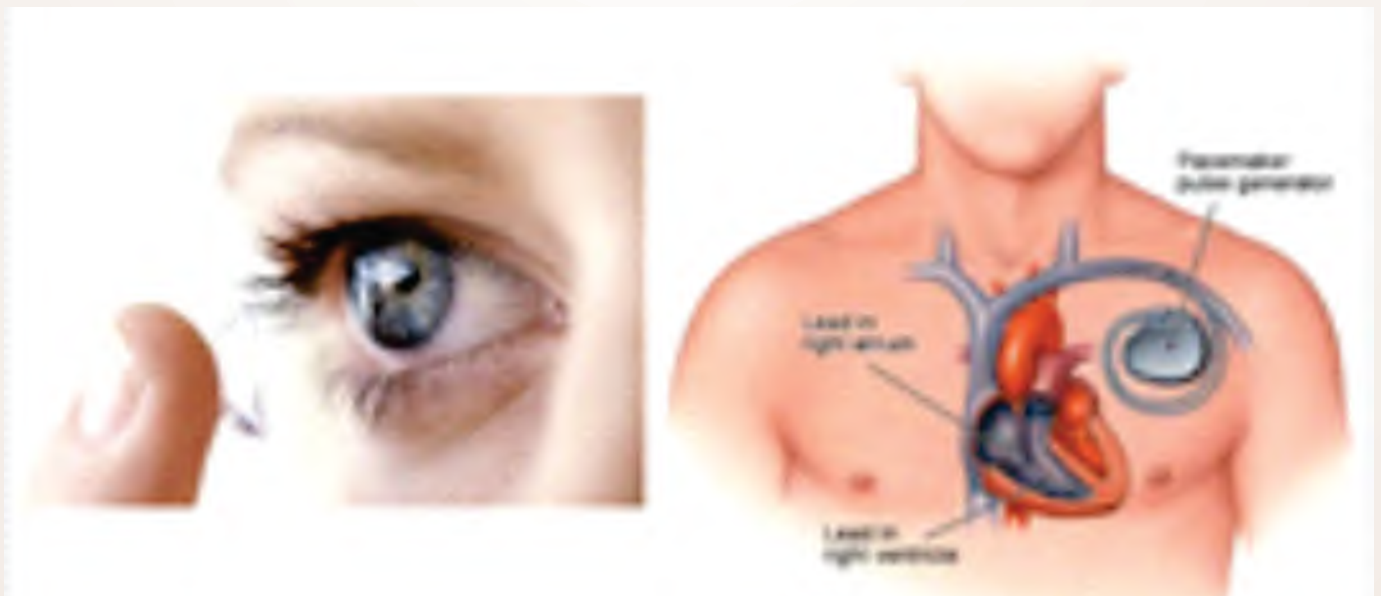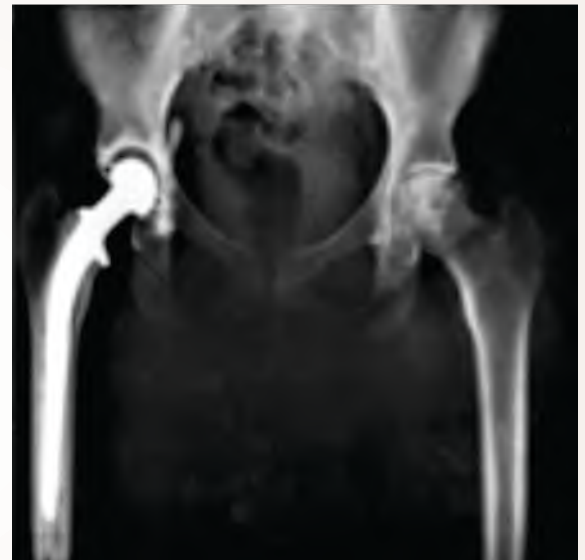
BACHELOR IN BIO-MEDICAL ENGINEERING TECHNOLOGY CURRICULUM
SEMESTER SYSTEM

SEMESTER-1			SEMESTER-2		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
HU-101	Islamic Studies	2+0	HU-102	Ideology & Constitution of Pakistan	2+0
ENG-101	Functional English	3+0	NS-102	Applied Physics	2+1
QR-101	Quantitative Reasoning-I	3+0	QR-102	Quantitative Reasoning-II	3+0
CS-101	Applications of ICT	2+1	BIT-121	Electrical Circuit Analysis	2+1
HU-107	Professional Practices	2+0	BIT-122	Human Anatomy & Physiology	3+1
NS-104	Essentials of Biology	2+1	BIC-121	Computer Programming	2+1
BIT-111	Workshop Practice	0+1			
	Total Credits	**17**		**Total Credits**	**18**

SEMESTER-3			SEMESTER-4		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
ENG-201	Expository Writing	3+0	MS-201	Entrepreneurship	2+0
SS-202	Economics	2+0	HU-201	Civics & Community Engagement	2+0
BIN-211	Biochemistry	2+1	BIT-221	Signals & Systems	2+1
BIN-212	Applied Mathematics	3+0	BIT-212	Digital Logic Design	2+1
BIT-112	Technical Drawing	0+1	BIT-224	Biomechanics	2+1
BIT-222	Electronic Devices & Circuits	2+1	BIT-225	Molecular Biology	2+1
	Total Credits	**15**		**Total Credits**	**16**

SEMESTER-5			SEMESTER-6		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
BIT-311	Biomaterials	2+1	BIT-321	Biomedical Imaging Devices	2+1
BIT-312	Biomedical Instrumentation	2+1	BIN-321	Probability & Statistics	2+0
BIT-314	Embedded Systems	2+1	BIT-322	Clinical Lab. Equipment	2+1
BIT-313	Biomedical Control Systems	2+1	BII-321	Electromechanical Systems	2+1
BIE-311	Technical Report Writing	2+0	BII-322	Industrial Biotechnology	2+1
BIT-315	Project-I	0+3	BIT-323	Project-II	0+3
	Total Credits	**17**		**Total Credits**	**17**

SEMESTER-7			SEMESTER-8		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
SS-411	Project Management	3+0	BIT-421	Supervised Industrial Training	0+16
BIT-415	Troubleshooting of Medical Devices	0+1			
BIT-41X	Depth Elective-I	2+1			
BIT-41X	Depth Elective-II	2+1			
BIT-41X	Depth Elective-III	2+1			
BIT-41X	Depth Elective-IV	2+1			
	Total Credits	**16**		**Total Credits**	**16**

LIST OF DEPTH ELECTIVE COURSES					
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
BIT-412	Medical Image Processing	2+1/3+0	BIT-419	Rehabilitation Techniques	2+1/3+0
BIT-413	Biotelemetry System	2+1/3+0	BIT-4110	Tissue Engineering Technology	2+1/3+0
BIT-414	Biomedical Signal Processing	2+1/3+0	BIT-4111	Drug Delivery Systems	2+1/3+0
BIT-415	Medical Device Quality System & Standards	3+0	BIT-4112	Artificial Intelligence	2+1/3+0
BIT-416	Medical Devices Regulatory Affairs	3+0	BIT-4113	Bioinformatics	2+1/3+0
BIT-417	Power Electronics	2+1/3+0	BIT-4114	Hospital Information System	2+1/3+0
BIT-418	Medical Robotics	2+1/3+0			

NFC INSTITUTE OF ENGINEERING & TECHNOLOGY
FEDERAL DEGREE AWARDING INSTITUTE
NFC IET
MULTAN-PAKISTAN

DEPARTMENT OF
Chemistry

Prospectus
2024

www.nfciet.edu.pk

Ms. Shahida Rehman
M.Phil (Chemistry)
M.Sc. (Chemistry)
19 years experience in Teaching

Head, Department of Chemistry

Mr. Tahir Mehmood
Ph.D. (In progress)
M. Phil (Islamic Studies)
12-years experience of
teaching

Engr. Muhammad Omer
M.Sc. (Petroleum Engineering)
B.Sc. (Chemical Engineering)
8 years' of experience in Industry
& Teaching
momer@nfciet.edu.pk

Introduction:

We are living in science of change where chemistry is an integral part of everything that teaches every material in existence is made up of matter. Chemistry is sometimes called "the central science", it acts as a bridge between different areas of natural sciences. This field covers chemical forms, the interaction of these chemicals with each other, define our existence on universe. By studying the basic properties of substances and the many transformations they undergo, the chemist finds solutions to scientific challenges and contributes to the development of new technologies.

In modern industrial societies, chemistry is one of the foundations of the economy. Like other sciences, the advancements in chemistry have proven a blessing to the world, and have brought with them challenges to overcome. The stimulating career options opened by chemistry are wide-ranging and cover different aspects of the field etc. education sector, environment, industry, forensic, and pharmaceutical industry.

Department:

The department of chemistry started regular functioning in 2020 that assist in understanding the chemistry among students. The department of chemistry offers suggestive ways to utilize the conceptual knowledge in all areas of chemical forms through course work and laboratory experiments besides student's research projects in final semesters. We have qualified faculty, diversified and established chemical laboratories and research facilities for our learners.

Vision:

The Department of Chemistry of NFC IET, Multan is determined to excel in chemistry education, research, and services.

Mission:

- To educate the students to investigate and solve the global environmental problems through the development of chemical education and research.
- To prepare competitive and professional undergraduates within an innovative, creative and, intellectually stimulating environment.
- To build proactive partnerships with industry and offer effective educational and technical services to

the society.

Specialization:

Department of Chemistry offers BS degree in Chemistry with specialization in the following four sub-areas.

- Organic Chemistry
- Inorganic Chemistry
- Analytical Chemistry
- Biochemistry

The first three years of BS program will be same for all students where they will be entertained with knowledge of all the disciplines of Chemistry. However, from the seventh semester, students will take courses in specialized areas of chemistry in accordance with their choice. In eighth semester, students need to complete a research project related to his/her specialized areas of chemistry that helps to enhance the knowledge and to have a proper understanding of the subject.

Laboratories:

Laboratory experience is an essential part of the educational process and a key factor to prepare the students for real chemist's practical life. Hence, Department of Chemistry have laboratories, which are under establishing phase having necessary instruments and tools in the different chemistry areas like organic, inorganic, analytical, environmental and biochemistry that provides hands-on practice for students. These labs have secure environment for experimentation and research having a privilege enjoyed by our students. These laboratories provide a platform to the students to understand the basic necessities and practical concepts of chemistry, that helps the students in designing and purification techniques which addresses the needs of industries and improves research capabilities.

The following is the list of laboratories of Department of chemistry.

1. Inorganic and Organic chemistry Lab
2. Analytical and Physical chemistry Lab
3. Biochemistry Lab
4. Environmental Lab

Department's key achievements:

Societies of Chemistry Department:

1. **Chemistry Department Literary and Chemical Society (CDLCS):**
   Chemistry Department Literary and Chemical society was established on September 2021. In Literary Society students are given opportunities to participate in writing contests, article writing and in poetry contests. The purpose of this society is to assist aspiring writers in certain paths to demonstrate their potential in the process of positivity, as well as to attain luminous path that helps readers to better understand through enthusiastic power.

2. **Chemistry Department Media Society (CDMS):**
   Chemistry Department Media society was established on September 2021. Media society develops student's talents in all related media tools and channels of distribution.

BS CHEMISTRY CURRICULUM
SEMESTER SYSTEM

SEMESTER-1			SEMESTER-2		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
ENG-101	Functional English	3+0	CHEM-101	Biochemistry-I	3+1
HU-108	History of Culture & Civilization	2+0	HU-102	Ideology & Constitution of Pakistan	2+0
QR-101	Quantitative Reasoning-I	3+0	QR-102	Quantitative Reasoning-II	3+0
CHEM-101	Applied Chemistry	2+0	NS-106	Functional Biology	2+1
CHEM-102	Inorganic Chemistry-I	3+1	CS-101	ICT	2+1
HU-101	Islamic Studies	2+0	HQ-002	Understanding of Quran	0+0
HQ-001	Understanding of Quran	0+0			
	Total Credits	**16**		**Total Credits**	**15**

SEMESTER-3			SEMESTER-4		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
CHEM-271	Analytical Chemistry-I	3+1	HU-201	Civic and Community Engagement	2+0
ENG-201	Expository Writing	3+0	CHEM-211	Analytical Chemistry-II	3+1
CHEM-221	Inorganic Chemi9stry-II	3+1	CHEM-231	Biochemistry-II	3+1
CHEM-261	Organic Chemistry-I	3+1	CHEM-251	Organic Chemistry-II	3+1
SS-204	Psychology	2+0	MS-201	Entrepreneurship	2+0
HQ-003	Understanding of Quran	0+0	HQ-004	Understanding of Quran	0+0
	Total Credits	**17**		**Total Credits**	**16**

SEMESTER-5			SEMESTER-6		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
CHEM-301	Biochemistry-III	2+1	CHEM-351	Industrial Chemistry	3+0
CHEM-302	Organic Chemistry-III	2+1	CHEM-352	Physical Chemistry	2+1
CHEM-303	Analytical Chemistry-III	2+1	CHEM-353	Inorganic Chemistry-III	2+1
Ch-300	Applied Thermodynamics	2+1	Arch-301	Visual Communication	0+3
PHYS-301	Modern Physics	3+0	EN-341	Environmental Management Science	3+0
CHEM-304	Polymer Chemistry	3+0	CHEM-354	Polymer Analysis & Characterization	2+1
HQ-005	Understanding of Quran	0+0	HQ-006	Understanding of Quran	0+0
	Total Credits	**18**		**Total Credits**	**18**

Specialization: Inorganic Chemistry

SEMESTER-7			SEMESTER-8		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
CHEM-401	Paper-I (Inorganic Reaction Mechanism)	3+0	CHEM-451	Paper-IV (Organometallics)	3+0
CHEM-402	Paper-II (B-Acceptor Ligands & Inorganic Polymers)	3+0	CHEM-452	Paper-V (Symmetry & Magneto-Chemistry)	3+0
CHEM-403	Paper-III (Inorganic Spectroscopy)	3+0	CHEM-453	Paper-VI (Radio and Nuclear Chemistry)	3+0
CHEM-404	Lab.-I (Inorganic Chemistry)	0+1	CHEM-454	Lab.-II (Inorganic Chemistry)	0+1
CHEM-405	Polymer Structure & Synthesis	3+0	CHEM-455	Advanced Polymer Chemistry	3+0
CHEM-456	Capston Project	3+0	CHEM-456	Capstone Project	3+0
HQ-007	Understanding of Quran	0+0	HQ-008	Understanding of Quran	0+0
	Total Credits	**16**		**Total Credits**	**16**

Specialization:Organic Chemistry

SEMESTER-7			SEMESTER-8		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
CHEm-411	Paper-I (Heterocyclic & Organometallic Compounds)	3+0	CHEM-461	Paper-IV (Natural Product)	3+0
CHEM-412	Paper-II (Reactive Intermediates)	3+0	CHEM-462	Paper-V (Organic Synthesis)	3+0
CHEM-413	Paper-III (Organic Spectroscopy)	3+0	CHEM-463	Paper-VI (Medicinal Chemistry)	3+0
CHEM-414	Lab.-I (Organic Chemistry)	0+1	CHEM-464	Lab.-II (Organic Chemistry)	0+1
CHEM-405	Polymer Structure & Synthesis	3+0	CHEM-455	Advanced Polymer Chemistry	3+0
	Internship	3+0	CHEM-456	Capstone Project	3+0
HQ-007	Understanding of Quran	0+0	HQ-008	Understanding of Quran	0+0
	Total Credits	**16**		**Total Credits**	**16**

Specialization: Bio-Chemistry

SEMESTER-7			SEMESTER-8		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
CHEM-421	Paper-I (Biomedical Chemistry)	3+0	CHEM-471	Paper-IV (Microbiology and Immunology)	3+0
CHEM-422	Paper-II (Molecular Biology)	3+0	CHEM-472	Paper-V (Bio-Nanotechnology)	3+0
CHEM-423	Paper-III (Physical Techniques in Biochemistry)	3+0	CHEM-473	Paper-VI (Nutritional Chemistry)	3+0
CHEM-424	Lab.-I (Biochemistry)	0+1	CHEM-474	Lab.-II (Biochemistry)	0+1
CHEM-405	Polymer Structure & Synthesis	3+0	CHEM-455	Advanced Polymer Chemistry	3+0
CHEM-456	Capstone Project	3+0	CHEM-456	Capstone Project	3+0
HQ-007	Understanding of Quran	0+0	HQ-008	Understanding of Quran	0+0
	Total Credits	**16**		**Total Credits**	**16**

Specialization: Analytical Chemistry

SEMESTER-7			SEMESTER-8		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
CHEM-431	Paper-I (Atomic Spectroscopy)	3+0	CHEM-481	Paper-IV (Luminescence Spectroscopy & Thermal Analysis)	3+0
CHEM-432	Paper-II (Electrochemical Techniques)	3+0	CHEM-482	Paper-V (Nuclear Analytical Techniques)	3+0
CHEM-433	Paper-III (Thermo-Chemical Techniques)	3+0	CHEM-483	Paper-VI (Food and Drug Analysis)	3+0
CHEM-434	Lab.-I (Analytical Chemistry)	0+1	CHEM-484	Lab.-II (Analytical Chemistry)	0+1
CHEM-405	Polymer Structure & Synthesis	3+0	CHEM-455	Advanced Polymer Chemistry	3+0
CHEM-456	Capstone Project	3+0	CHEM-456	Capstone Project	3+0
HQ-007	Understanding of Quran	0+0	HQ-008	Understanding of Quran	0+0
	Total Credits	**16**		**Total Credits**	**16**

DEPARTMENT OF
Physics

Prospectus
2024

www.nfciet.edu.pk

Dr. Suleman Khan
Ph.D. (Nanotechnology Physics)
M.Phil (Material Science & Semiconductor Physics)
M.Sc. (Nuclear Physics)
17 years experience in teaching
and advance research
sulemankhan@nfciet.edu.pk

Head, Department of Physics

Engr. Saqeb Ejaz
Lecturer
M.Sc. Elect. & Electronics
10 years experience in
teaching, research & Industry
saqeb.ejaz@nfciet.edu.pk

Mr. Muhammad Khalid
Assistant Lecturer
MS (Mathematics)
BS (Mathematics)
4 years experience in
teaching, & academic
khalidijaz789@gmail.com

Ms. Munazza Ramzan
Lecturer
M.Phil (Physics)
3 years experience in
teaching, & academic
rmunazza46@gmail.com

Mr. Abdul Mughni Sameeja
Lecturer
M.Phil (Physics)
5 years experience in
teaching, & research in
medical physics
abdulmughni.sameeja@gmail.com

Engr. Syed M. Usman Faheem
M.Sc. Elect.l & Comp. Engg.
B.Sc.Electrical Engg.
6 years experience in
teaching, & academic
mufaheem_nfc.iet@gmail.com

Mr. Aoun Muhammad
MS (Mathematics)
10 years experience in
teaching, & academic
aounmuhammad618@gmail.com

Introduction:

The department of Physics was established in June 2020. The department presently offer undergraduate degree programs in the subject of pure physics. But in near future, we will plan to start the M.Phil. (Physics) program with several inter-disciplinary areas. During this short span of time, special focus is placed on preparing students equipped with basic concepts and hands on laboratory training at undergraduate and graduate level. Students are specially exposed to practical training in the scientific organizations and industry through a meaningful internship program. They are fully trained to join the job market as a valuable asset soon after completion of their degree and take up further study without any difficulty.

Specializations:

- **Traditional Physics:** This specialization is developed with a focus on fundamental physics combining physics to unlock the physical world around us. It is recommended for students considering an advanced degree, such as BS/MS in physics or other STEM-related areas. Courses include Mechanics, Modern Physics, Classical Mechanics, Mathematical Physics, Quantum Mechanics, Optics, and Statistical & Thermodynamics.

- **Materials & Nanophysics:** Materials science and nanophysics lead to well-paying careers in the high-technical industry and energy fields. Our faculty study semiconductors, magnets, superconductors, nano sensors, magnetic/ photonic devices, and biomaterials which mean you have expert advice readily available when you launch your own career focused research. Courses include Quantum Mechanics, Electricity and Magnetism, Materials Science and Nanophysics, Modern physics, Optics and Lasers.

- **Computational Physics:** Physicists with a solid knowledge of computing are in high demand for various jobs, such as quantitative analyst and data scientist. The curriculum develops critical thinking, problem solving, and programming skills through physics and computer science classes. You might create a flight simulator program, or make computational models to study the ocean floor or stock market.

- **Biomedical Physics:** Medical physicists are scientists who work in healthcare to develop new medical technologies and radiation-based treatments. They might help to beat cancer, or develop a better MRI and other medical devices. They may deal directly with patients, test and maintain equipment. Students learn the physics behind the techniques and devices used in the life and medical sciences. The curriculum for this specialization includes courses in physics and Physical chemistry.

Program Mission:

- To develop a solid understanding of the fundamental principles of physics in students,

including: a firm conceptual grasp of the central principles of physics, an ability to work with the concepts of experimental physics and functional understanding of these ideas play out in the real world.

- To create a flexible and creative problem-solving ability in students.
- To develop an integrated understanding of the unity of physics.
- To create a functional understanding of symbolic and numerical computation.
- To offer rigorous and comprehensive courses that allow them to perform at a high-level fostering curiosity and excitement about the physical world.
- To provide an exciting learning opportunity for non-physics and non-science majors that provides basic understanding of physics and problem-solving skills.
- To develop expertise in experimental methodologies in students.
- To maintain a research environment, in which key scientific and technical innovation are generated.
- To maintain healthy level of external research funds allowing us to provide financial support for undergraduate research and prepare them to academic, research, and industrial carriers.
- To build faculty that bring exciting and current research perspectives to the classroom.
- To prepare undergraduate students for graduate studies and for the technical careers as well.

Aims and Objectives:

The main educational objectives of BS (4-year) degree program are:

- To impart students with a conceptual understanding of the fundamental principles of physics, natural laws and their interpretation, as well as mathematical formulation of the physical phenomena in nature.
- To develop critical skills necessary for solving unknown problems from our physical surroundings.
- To develop the capability of analyzing, addressing and posing solutions to problems of natural importance and to instill a deep appreciation of the need for optimum utilization of natural resources and environment.

- To instill in students the habit of independent thinking, deep inquiry, and motivation for self-education.
- To sharpen our students' mathematical prowess making them capable of modeling, analyzing and predicting the behavior of physical processes.
- To enhance our students' skills in scientific communication and the ability to clearly present physics and science in simple and clear language.
- To introduce students the spirit of working in interactive groups with the necessary requirements of scientific and professional ethics.
- To develop hands-on experience in different laboratory techniques and modern instrumentation.
- To enhance students' competence in design, conduct of experiments, analysis and presentation of experimental data and results.
- To provide an in-depth understanding of some specialized area of physics through the option of elective courses.
- To equip students with the necessary skills set for pursuing careers in physics education, research and industry in government.

Content areas

At the simplest level, we have a list of all the topics that are covered somewhere in the major curriculum. Broadly speaking, the central topics match the required courses: classical dynamics, thermal physics, quantum physics, electricity & magnetism, and experimental methods. A more highly-specified list of essential topics for each course is provided in the appendix. We can then state our learning goals in a straightforward manner. Physics majors will have a good understanding of the topics included in this list.

Experimental methodologies:

In addition to an understanding of presently known results, our students should also know the methods by which new knowledge is acquired and evaluated. Thus, along with a deeper understanding of physical principles, the laboratory component of our curriculum should also impart methodological knowledge and skills. For example, an understanding of how to use basic scientific equipment (multimeters, oscilloscopes, power supplies etc.) and an understanding of experimental uncertainty analysis are the learning goals of our curriculum.

About Physics labs:

The Physics labs at NFC-IET are well designed and establish to supplement degree course. The experiments in the Physics lab are providing to student's practical perspective to the theories and models that they study in the class. An integral part of the course is to develop critical thinking skills in students as they learn about trouble shooting problems in experiments. The lab experience will allow the students to further develop the ability to determine themselves what techniques and procedures students have to follow, what questions to ask, what the acquired data means, how reliable it is and what to do when things do not work as expected. They are continuously exploiting the data to derive interesting information from the experiments and increase scope and capacity. We often allow students to perform their own independent study on experiments if they have interesting ideas. As a result of these exercises, the Physics lab does not become stagnant but rather improves its standard and rigor after every semester.

For this purpose, NFC-IET establish following labs:

- Mechanics lab
- Electricity & Magnetism lab
- Thermodynamics lab
- Optics lab
- Modern physics lab
- Electronics lab
- Electromagnetic lab

Admission Criteria

F. Sc (pre-engineering & pre medical, general Group with Physics), ICS, DAE or equivalent with minimum 45% marks from an accredited institution.

Career Opportunities:

After completing the degree, the graduates will avail the opportunity to work with the following:

- R&D Organization
- Multinational Industries
- Atomic energy Commission
- Khota Research Labs
- SUPARCO
- Aviation
- All engineering related areas
- Aerospace
- Teaching & Research

BS PHYSICS CURRICULUM
SEMESTER SYSTEM

SEMESTER-1			SEMESTER-2		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
ENG-108	Functional English	3+0	NS-103	Geo Informatics	2+1
HU-108	History of Culture and Civilization	2+0	HU-102	Ideology and Constitution of Pakistan	2+0
QR-101	Quantitative Reasoning-I	3+0	QR-102	Quantitative Reasoning-II	3+0
CS-101	Applications of Information & Comm. Tech.	2+1	PHYS-102	Electricity & Magnetism	4+0
PHYS-101	Mechanics	4+0	CS-102	Computer Programming	2+1
PHYS-103	Physics Lab.-I	0+1	PHYS-104	Heat & Thermodynamics	3+0
HU-101	Islamic Studies/Ethics	2+0	PHYS-106	Physics Lab.-II	0+1
HQ-001	Understanding of Quran	0+0	HQ-002	Understanding of Quran	0+0
	Total Credits	**18**		**Total Credits**	**19**

SEMESTER-3			SEMESTER-4		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
ENG-201	Expository Writing	3+0	MS-201	Entrepreneurship	2+0
PHYS-203	Waves & Oscillations	3+0	PHYS-251	Mathematical Methods of Physics-I	3+0
PHYS-204	Modern Physics	3+0	MATH-224	Differential Equation	3+0
SS-204	Psychology	2+0	PHYS-205	Optics	3+0
MATH-223	Introduction to Linear Algebra	3+0	HM-201	Civics and Community Engagement	2+0
PHYS-202	Physics Lab.-III	0+1	PHYS-207	Physics Lab.-IV	0+1
HQ-003	Understanding of Quran	0+0	PHYS-211	Classical Mechanics	3+0
			HQ-004	Understanding of Quran	0+0
	Total Credits	**15**		**Total Credits**	**17**

SEMESTER-5			SEMESTER-6		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
PHYS-352	Mathematical Methods of Physics-II	3+0	OB-300	Organizational Behavior	3+0
PHYS-321	Electromagnetic Theory-I	3+0	PHYS-322	Electromagnetic Theory-II	3+0
PHYS-352	Introduction to Relativity	3+0	PHYS-392	Electronics-II	3+0
PHYS-391	Electronics-I	3+0	PHYS-361	Statistical Physics	3+0
PHYS-301	Thermodynamics	3+0	PHYS-331	Quantum Mechanics-I	3+0
PHYS-306	Physics Lab.-V	0+1	PHYS-307	Physics Lab.-VI	0+1
HQ-005	Understanding of Quran	0+0	HQ-006	Understanding of Quran	0+0
	Total Credits	**16**		**Total Credits**	**16**

SEMESTER-7			SEMESTER-8		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
PHYS-471	Methods of Experimental Physics	3+0	PHYS-476	Nanomaterial and Application	3+0
PHYS-441	Solid State Physics-I	3+0	PHYS-477	Computational Physics	3+0
PHYS-433	Atomic and Molecular Physics	3+0	PHYS-442	Solid State Physics-II	3+0
PHYS-474	Introduction to Nanoscience & Nanotechnology	3+0	PHYS-493	Nuclear Physics	3+0
PHYS-406	Physics Lab.-VII	0+1	PHYS-500	Research Project	0+3
PHYS-400	Field Experience/Internship	0+3	HQ-008	Understanding of Quran	0+0
HQ-007	Understanding of Quran	0+0			
	Total Credits	**16**		**Total Credits**	**15**

DEPARTMENT OF
Food Science and Technology

Prospectus
2024

www.nfciet.edu.pk

Dr. Sadiq Hussain
Incharge, Department of Food
Science and Technology
Ph.D. (Chem. Engg.)
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.), P.E.
32 years' experience in chemical
industry, research & academia
sadiqhusain@nfciet.edu.pk

Dr. Muhammad Subhan Azeem
Focal Person, Department of Food
Science and Technology
Ph.D. (Chem. Engg.)
M.Sc. (Chem. Engg.)
B.Sc. (Chem. Engg.)
13 years' experience in Chemical
Industry, research & academia
msazeem@nfciet.edu.pk

Introduction

Food science and technology is not merely a scientific discipline; it's a powerful driver of change within the food industry. It harnesses the power of chemistry, biology, engineering, and other scientific fields to guide the selection, preservation, processing, and packaging of food products. At its core, this field strives to ensure the safety and quality of the food we consume.

Our mission at the Institute is to educate the next generation of highly qualified food science and technology professionals. These graduates will be equipped to navigate and contribute to the rapid evolution of the Pakistani food industry, ultimately driving industrial and economic progress. We believe in fostering integrity, excellence through teamwork, discipline, and commitment to work — values that underpin our academic journey.

Recognizing the immense potential of Pakistan's food industry, we continuously invest in teaching and research initiatives. By staying attuned to the dynamic needs of the sector, we meticulously

curate courses that provide students with a solid foundation in essential food technology areas.

Our distinguished faculty combines extensive teaching, training, research, and industry experience. Coupled with our state-of-the-art scientific equipment and functional laboratories, this ensures students receive a hands-on learning experience that prepares them for successful careers in the food science and technology sector.

Mission of the Program:

We are dedicated to elevating the value of our graduates by providing them with outstanding professional learning, guidance, and real-world experience. Our mission focuses on building exceptional capacity in the field of Food Science and technology, preparing our graduates to become leaders and innovators who can make **a** significant impact on the world.

Nurturing Passionate Professionals: We offer a stimulating and engaging learning environment where students can explore diverse career paths in food science, technology, processing, and agro-business. Whether you're drawn to research, product development, or entrepreneurship, we'll help you shape your future in food.

- **Building In-Demand Skills:** Our curriculum is designed to provide you with the knowledge and practical skills that are highly sought-after by the food industry and labor market. We offer flexible learning opportunities to ensure you acquire the expertise you need to succeed.

- **Fast-Track to Employment:** We understand

the importance of a seamless transition into the workforce. Our program provides young people and career changers with the skills and resources needed to secure rewarding jobs quickly.

- **Global Outlook with Local Impact:** We combine the best of international knowledge and practices with a deep understanding of the local context. This ensures our graduates are equipped to address skill gaps within the Pakistani economy and contribute to its growth.

By choosing our program, you are not only investing in your future but also in the future of our food systems. Join us and make a lasting difference

FACULTY
Dr. Muhammad Subhan Azeem
Mr. Muzaffar Riaz
Ms. Laraib Abid
Mr. Usman Tahir
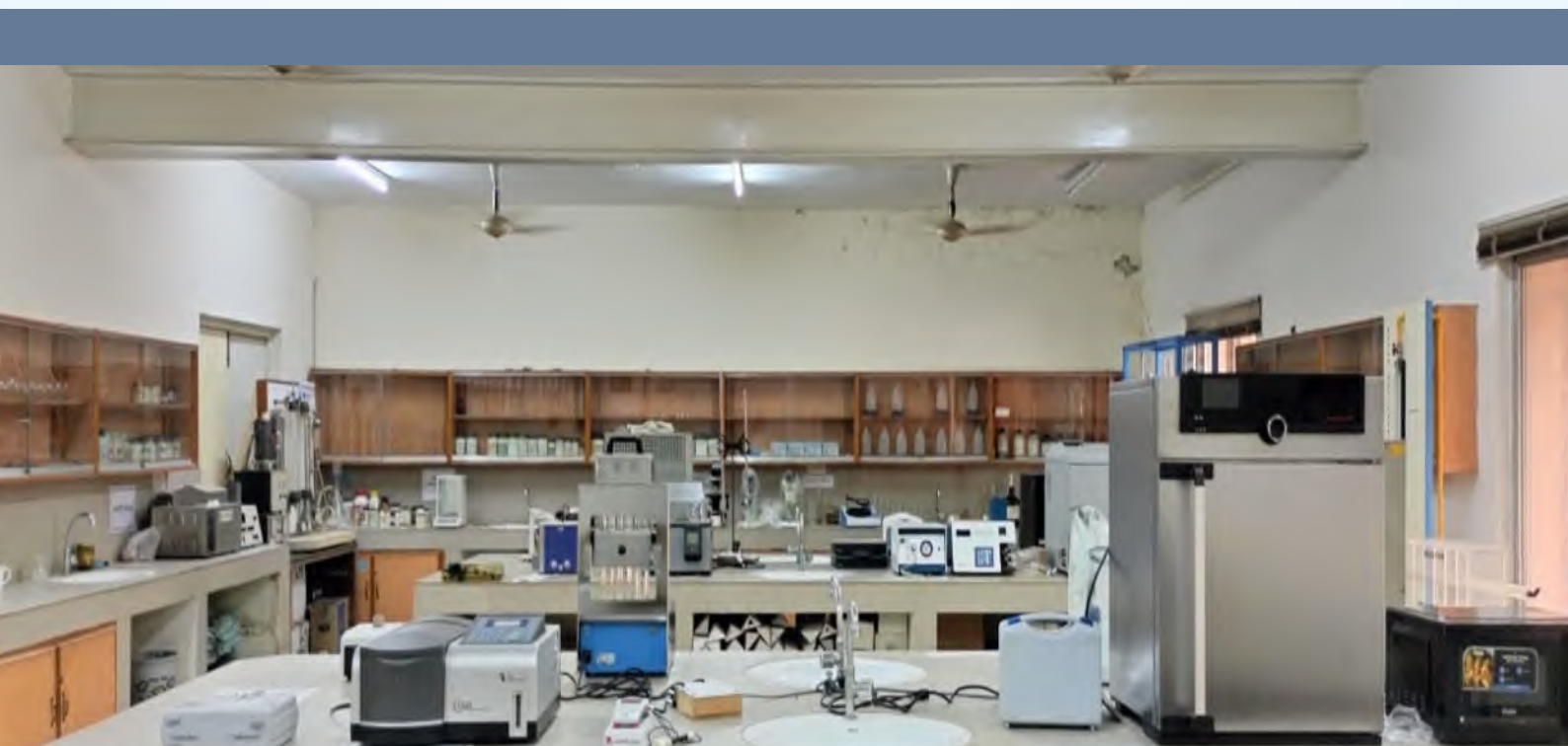
Visiting Faculty
Mr. Nasir Saleem
Ms. Mehreen Ali Hashmi
Ms. Marsa Batool
Ms. Noreen Shahzadi

Laboratories
The department has recently equipped the following state of the art labs with modern equipment

- Food Analysis Lab
- Human Physiology and Anatomy Lab
- Computer Lab
- Bio Chemistry Lab
- Food Processing and Preservation Lab
- Food Microbiology Lab
- Fluid Mechanics Lab

➤ Instrumental Techniques in Food Analysis Lab

➤ Continental Hotels
➤ R&D : New Product & Process Development
➤ Marketing & Sales, Business Development & Marketing Analysis
➤ Procurement & Supply chain management

Facilities

Food Science and Technology department is a purpose-built building that offers ample space for laboratories, training rooms, spacious classrooms, meeting and discussions rooms, video conference rooms, and faculty offices.

Facilities in the labs are for better learning and to prepare them to fulfill future job requirements. The following facilities are available in our lab:

➤ Air-conditioned classrooms
➤ Access of Free Wifi
➤ Highly Equipped computers for specialized applications
➤ Research clusters

Jobs & Career

➤ Government Food Departments (Food Inspector)

➤ Punjab Food Authority

➤ Health and Safety Inspector

➤ Entrepreneurs
➤ Food technologist: Production/Operation/ QA/QC
➤ M/S Nestle
➤ Beverage Industry
➤ Baking Industry

BS FOOD SCIENCE AND TECHNOLOGY CURRICULUM
SEMESTER SYSTEM

| SEMESTER-1			SEMESTER-2		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
FST-101	Introduction to Food Science & Technology	2+1	HU-101	Islamic Studies	2+0
NS-101	Organic and Inorganic Chemistry	2+1	FST-103	Stoichiometric Calculations	3+0
HU-102	Ideology and Constitution of Pakistan	2+0	QR-102	Quantitative Reasoning-II	3+0
CS-101	Application of Information & Communication Tech.	2+1	FST-104	Global Food Issues	3+0
ID-101	Basic Biology	2+1	HU-108	History of Culture and Civilization	2+0
FST-102	Physical Properties of Food	3+0	ENG-101	Functional English	3+0
QR-101	Quantitative Reasoning-I	3+0	HQ-002	Understanding of Quran*	0+0
HQ-001	Understanding of Quran*	0+0			
	Total Credits	**20**		**Total Credits**	**16**

SEMESTER-3			SEMESTER-4		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
MS-201	Entrepreneurship	2+0	FST-204	Instrumental Techniques in Food Analysis	2+1
FST-201	Unit Operation in Food Processing	2+1	ID-202	Food Process Engineering-I	2+1
FST-202	Food Processing and Preservation	2+1	FST-205	Fluid Mechanics	2+1
FST-203	Basic Agriculture	2+1	FST-206	Food Chemistry	2+1
ID-201	Physiology & Bio Chemistry of Nutrients	3+0	ENG-201	Expository Writing	3+0
SS-201	Sociology	2+0	HU-201	Civic and Community Engagement	2+0
HQ-003	Understanding of Quran*	0+0	HQ-004	Understanding of Quran*	0+0
	Total Credits	**16**		**Total Credits**	**17**

SEMESTER-5			SEMESTER-6		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
FST-301	Cereal & Baking Technology	2+1	FST-306	Occupational Safety, Health & Environment	2+0
FST-302	Sugar, Confectionary & Beverage Technology	2+1	FST-307	Food Additives	2+0
ID-301	Food Process Engineering-II	2+1	FST-308	Research Project and Scientific Writing	1+1
FST-303	Fruit and Vegetable Processing	2+1	FST-309	Principles of Human Nutrition	3+0
FST-304	Food Microbiology	2+1	FST-3**	Elective-I	3/2+1
FST-305	Food Laws and Regulations	3+0	ID-302	Public Health Nutrition	3+0
HQ-005	Understanding of Quran*	0+0	HND-301	Dietetics	3+0
			HQ-006	Understanding of Quran*	0+0
	Total Credits	**18**		**Total Credits**	**18**

SEMESTER-7			SEMESTER-8		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
FST-401	Meat & Diary Technology	2+1	FST-403	Food Plant Layout	3+0
FST-402	Field Experience/Internship	0+3	FST-404	Food Safety & Toxicology	3+0
FST-4**	Elective-II	3+0	FST-405	Capstone Project	0+3
HND-401	Meal Planning and Management	2+0	FST-4**	Elective-III	3/2+1
HND-402	Human Anatomy	2+1	HND-404	Human Physiology	2+1
HND-403	Assessment of Nutritional Status	2+1	HND-405	Nutrition Through Life Cycle	2+0
HQ-007	Understanding of Quran*	0+0	HQ-008	Understanding of Quran*	0+0
	Total Credits	**17**		**Total Credits**	**17**

ELECTIVE COURSES					
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
Elective-II			**Elective-II**		
FST-310	Food Quality Management	3+0	FST-410	Food Packing	3+0
FST-311	Food Biotechnology	3+0	FST-411	Food Product Development	3+0
FST-312	Sea Food Processing	2+1	FST-412	Food Supply Chain Management	3+0
Elective-III					
FST-413	Sensory Evaluation of Foods	2+1			
FST-414	Poultry and Egg Processing	3+0			
FST-415	Process Control in Food Industry	3+0			
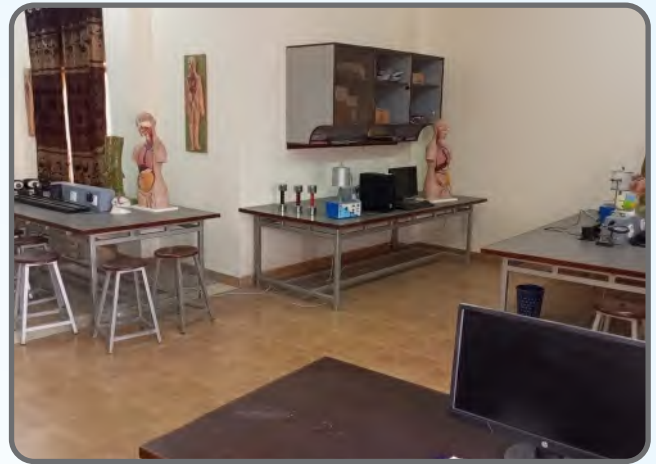
DEPARTMENT OF
Fine Arts

Prospectus
2024

www.nfciet.edu.pk

Mission

Focus on fostering creativity, nurturing artistic talent, and providing a comprehensive education in arts. It aims to inspire students to explore various artistic disciplines.

Program Introduction:

Our program offers a dynamic and diverse range of artistic disciplines, including painting, sculpture, photography, and art history. With a dedicated faculty of experienced artists and scholars, we provide a supportive and creative environment for students to explore their artistic passions and develop their skills. Our state-of-the-art facilities and resources ensure that students have the tools they need to excel in their artistic endeavors. Whether you're interested in traditional techniques or contemporary art practices, our program is designed to nurture your creativity and help you achieve your artistic goals. Join us in embracing the transformative power of art and unblocking your creative potential in our vibrant Fine Arts Program in NFC-IET.

Our Fine Arts Program is designed to ignite your passion for creativity and equip you with the skills and knowledge to excel in the diverse world of visual arts. Through a dynamic curriculum that blends traditional techniques with contemporary practices, you will have the opportunity to explore a wide range of artistic mediums, from painting and sculpture to digital art and installation. Our dedicated faculty, comprised of experienced artists and educators, will guide you in honing your craft, expanding your artistic vision, and preparing you for a successful career in theever-evolving art industry.

- Our university's Fine Arts Program offers a diverse range of artistic disciplines, including painting, sculpture, photography, and art history.
- The program is led by a dedicated faculty of experienced artists and scholars who provide mentorship and guidance to students.
- Students have access to state-of-the-art facilities , studios, and resources to support their artistic development and experimentation.
- The program encourages creativity, critical thinking, and artistic expression, preparing students for careers in the arts or further academic pursuits.
- Through a combination of theoretical knowledge and hands-on practice, students can explore traditional techniques and contemporary art practices.
- The Fine Arts Program aims to foster a supportive and collaborative environment where students can grow as artists and thinkers, pushing the boundaries
- The Fine Arts Program offers opportunities for interdisciplinary collaboration, allowing students to explore connections between different art forms.
- Students have the chance to exhibit their work in on-campus galleries, participate in art competitions, and engage with the local artistic community.
- The program emphasizes both technical skill development and conceptual exploration, encouraging students to push the boundaries of their creativity.
- Students benefit from small class sizes and personalized attention from faculty, fostering a supportive learning environment.
- The program integrates art history and theory courses to provide a comprehensive understanding.

Objective

The Fine Arts Program aims to provide a comprehensive and enriching artistic education for students, focusing on developing their technical skills, nurturing creativity, and

fostering critical thinking. Through a combination of studio-based practice and theoretical studies, the program seeks to equip students with the tools and knowledge needed to succeed in the dynamic field of visual arts. By exploring various artistic disciplines and engaging with art history and contemporary practices, students are encouraged to push the boundaries of their creativity and develop a strong artistic voice. The program also emphasizes the importance of interdisciplinary collaboration, providing opportunities for students to explore connections between different art forms and expand their artistic horizons. Ultimately, the Fine Arts Program aims to inspire students to become skilled artists.

- Develop students' technical skills in various artistic disciplines such as painting, sculpture, photography, and more.
- Foster creativity, critical thinking, and problem-solving abilities through hands-on artistic practice and theoretical studies.
- Cultivate an understanding of art history, contemporary art practices, and cultural contexts to enrich students' artistic perspectives.
- Encourage interdisciplinary collaboration and experimentation to broaden students' artistic horizons
- and encourage innovation.
- Provide opportunities for students to exhibit their work, engage with the local artistic community, and
- prepare for careers in the arts.
- Support students in building a strong portfolio of work that showcases their artistic growth and unique creative voice.
- Encourage students to experiment with new techniques, materials, and concepts to broaden their artistic repertoire and encourage innovation.
- Provide a supportive and inclusive learning environment where students feel empowered to express themselves creatively and explore their artistic potential.
- Offer opportunities for students to participate in workshops, artist talks, and exhibitions to enhance their understanding of the art world and build professional networks.
- Support students in developing a strong work ethic, time management skills, and resilience to navigate the challenges.

Career Paths
- Visual Artist: Pursue a career as a professional artist creating paintings, sculptures, installations, or other visual art forms for galleries, exhibitions, commissions, and public spaces.
- Art Educator: Teach art at schools, community centers, or art institutions, inspiring the next generation of artists and fostering creativity in students of all ages.
- Art Director: Oversee the visual style and artistic elements of projects in industries such as advertising, publishing, film, and video games, ensuring a cohesive and impactful artistic vision.
- Curator: Work in museums, galleries, or cultural institutions to research, select, and present artworks for exhibitions, collections, and educational programs.
- Art Therapist: Use art as a form of therapy to help individuals explore emotions, reduce stress, and improve mental well-being in settings such as hospitals, rehabilitation centers, and community organizations.
- Freelance Artist/Designer: Work independently or on a contract basis to create custom artwork, design projects, illustrations, or graphics for clients in various industries.
- Arts Administrator: Manage arts organizations, galleries, or cultural institutions, overseeing operations, programming, fundraising, and community engagement initiatives to support the arts and artists.
- Exhibition Designer: Design and create immersive and engaging exhibition spaces for museums, galleries, trade shows, and events to showcase artwork and artifacts effectively.
- Art Critic/Writer: Share insights and perspectives on art through writing reviews, articles, and critiques for publications, websites, or blogs, contributing to the dialogue and appreciation of art.

BS FINE ARTS CURRICULUM
SEMESTER SYSTEM

SEMESTER-1			SEMESTER-2		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
FA-101	Drawing-I	0+3	FA-102	Drawing-II	0+3
FA-111	History of Art-I	2+0	FA-112	History of Art-II	2+0
FA-151	Visual Communication-I	0+3	FA-152	Visual Communication-II	0+3
FA-121	Sculpture-I	0+3	FA-122	Sculpture-II	0+3
HU-101	Islamic Studies/Ethics	2+0	HU-102	Ideology & Constitution of Pakistan	2+0
ENG-101	Functional English	3+0	NS-105	Ecology	2+1
HU-106	History of Ideas-I	2+0	CS-101	ICT	2+1
QR-101	Quantitative Reasoning-I	3+0	QR-102	Quantitative Reasoning-II	3+0
HQ-001	Understanding of Quran	0+0	HQ-002	Understanding of Quran	0+0
	Total Credits	**21**		**Total Credits**	**22**

SEMESTER-3			SEMESTER-4		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
FA-201	Introduction to Fine Arts	0+3	FA-202	Fine Arts Major-I	0+3
FA-221	Drawing-III	0+3	FA-222	Drawing-IV	0+3
FA-231	Cultural Studies	2+0	FA-232	Art Appreciation	2+2
FA-211	History of Art-III	2+0	FA-212	History of Art-IV	2+0
SS-205	Sociology	2+0	HU-201	Civics & Community Engagement	2+0
ENG-201	Expository Writing	3+0	MS-201	Entrepreneurship	2+0
HQ-003	Understanding of Quran	0+0	HQ-004	Understanding of Quran	0+0
	Total Credits	**15**		**Total Credits**	**16**

SEMESTER-5			SEMESTER-6		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
FA-301	Fine Arts Major-II	0+3	FA-302	Fine Arts Major-III	0+3
FA-311	Art Theory	2+0	FA-312	Art and Gender	2+0
FA-341	Fine Arts Seminar-I	2+0	FA-342	Fine Arts Seminar-II	2+0
FA-351	Photography-I	0+3	FA-352	Photography-II	0+3
FA-314	Elective-I	0+3	FA-315	Elective-II	0+3
HQ-005	Understanding of Quran	0+0	HQ-006	Understanding of Quran	0+0
	Total Credits	**13**		**Total Credits**	**13**

SEMESTER-7			SEMESTER-8		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
FA-401	Mini Thesis	0+6	FA-402	Thesis	0+12
FA-411	Research Methodology	3+0	FA-412	Dissertation	3+0
FA-421	Product Design	0+3	HQ-008	Understanding of Quran	0+0
FA-431	Internship	0+3			
HQ-007	Understanding of Quran	0+0			
	Total Credits	**15**		**Total Credits**	**15**

LIST OF ELECTIVE COURSES

1. Art and Society
2. Introduction to Visual Arts
3. Cultural Studies
4. Islamic Art and Architecture
5. History of Crafts
6. History of Film
7. Museum Studies
8. Urban Studies
9. Curatorial Practices

NFC INSTITUTE OF ENGINEERING & TECHNOLOGY
FEDERAL DEGREE AWARDING INSTITUTE

NFC IET
MULTAN-PAKISTAN

Vice Chancellor Secretariat

Prospectus
2024

Allied Offices

- Registrar Office
- Students' Affairs
- Quality Enhance Committee
- Treasurer Office
- Commercial Department
- Controller Office
- Admission Committee
- ORIC

www.nfciet.edu.pk

REGISTRAR OFFICE

Engr. Nasrullah Nawaz Khan Babar
Registrar

Mr. Tahir Hussain Meyo
Dy. Registrar (Admin)

Mr. Nazir Ahmad Chishti
Dy. Registrar (Legal)

Syed Nadeem Ahmed
Executive Admin

Khurhseed Khan Babar
Assistant Admin.

Mr. Muhammad Nadeem Sial
Assistant Admin.

Mr. Muhammad Azhar
PA to Registrar

Services

The Office of the Registrar Supports Teaching and Learning at NFC-IET by Maintaining the integrity of academic & research policies and serves as central administrative office of students, faculty and alumni. We provide data to internal and external constituencies, enabling these offices to make informed enrollment management and policy decisions. This office ensures adherence to academic policy, preserving academic integrity and safeguarding academic records. The office of the Registrar Provides exceptional service by valuing student and staff engagement, adapting to the needs of the campus community, and aligning our goals with "uplifting to the whole people."

Our mission philosophy is built upon providing quality education in a respectful manner. We believe in diversity of people, thought and opinion as we build community and explore, create and shape the future with innovative educational support strategies.

The Registrar's Office is located on the first floor of the Vice Chancellor Secretariat.

Responsibilities:

The Major responsibilities of the Registrar:

- To conduct of meetings of statutory bodies of the institute, viz: The senate, Syndicate, Academic Council, Affiliation Committee and selection Board.
- Monitoring and control of quality management system of the department for the betterment of the Institute.
- Management of all academic activities of the institute including admissions, enrolment and maintenance of student records.
- Monitoring and control of the security and general administrative matter to keep the environment smooth for the students, faculty members and other staff.
- Human resource management of Institute employees and related matters.
- Correspondence with external agencies.
- Formation of Senate and Syndicate.
- Maintenance of Graduate register and holding their elections.

STUDENT'S AFFAIRS

Engr. Zeeshan Raza
Assistant Professor
Director Student Affairs

Engr. Tahir Mehmood Bhatti
Dy. Director Student Affairs

Engr. Serosh Karim
Assistant Professor
Dy. Director Student affair

Directorate of Student Affairs

By acting as a liaison between students, teachers, and the university administration, the Directorate of Student Affairs (DSA) at NFC-IET actively strives to organize the multiple facets of student life and development. The Student Affairs staff collaborates with students in a comprehensive way, offering advice and assistance as they pursue their academic goals and grow personally in preparation for taking on the obligations of responsible adults.We want to streamline the process for students to incorporate their academic experiences with all other dimensions of university life.

SERVICES
Counselling and Guidance

The Student Affairs Office serves as a liaison between students, faculty, and administration. The Student Affairs Office is the central place for students to get assistance and

confidential help with any problem they encounter on campus. It oversees student counseling, housing, societies, and discipline, with two Deputy Student Affairs available for counseling and guidance.

Extracurricular Activities

We offer a range of extracurricular activities to help students unwind and explore their interests. The Student Affairs Office promotes co-curricular activities that enrich our graduates and help them build strong relationships with peers, faculty, and administration. From literary and artistic events to sports and games, our activities provide healthy outlets for multi-dimensional growth.

Student Societies

NFC-IET provides a thriving platform of student societies that aim to nurture students' talents beyond the classroom. These dynamic societies, some of which are mentioned below, encourage leadership and professional development in the students.

- DSA Team
- Business Administration Literati Society(BALS)
- NFC Computing Society
- Chemical Department Technical Society
- Electrical Media and Tech Society
- Society for Civil Engineering and Technology
- Mechanical Literary Society

Major Events

NFC-IET offers a diverse range of events and festivities to provide students with opportunities to broaden their horizons, enhance their skills, and foster a sense of community spirit. Our goal is to provide the best possible educational experience for future leaders to achieve their full potential.

Celebrating Culture, Creativity, and Awareness: Festivities and Events at Our Institute

Our Cultural Festival and Spring Funfair promote aesthetics, creativity, and cultural awareness. These events highlight the rich diversity of Pakistan and promote national integration amongst students, while instilling a sense of pride in our heritageHeld in October and April, they highlight Pakistan's diversity and promote national integration, with activities such as concerts, exhibitions, and talent expos.
Our awareness sessions cover a wide range of topics, from health and wellness to social justice and environmental sustainability. We invite experts from various fields to share their knowledge and expertise with our students and encourage them to ask questions and engage in thoughtful discussions. Through these sessions, we aim to cultivate a sense of responsibility and empathy in our students towards the world around them.The institute oftentimes organizes

QUALITIY ENHANCEMENT CELL (QEC)

Dr. Sadiq Hussain
QEC Director

Dr. Syed Safdar Raza
QEC Member

Dr. Syed Adnan Raheel Shah
QEC Member

Syed Sikandar Raza
QEC Member

Dr. Saad Saeed
QEC Member

Introduction

Quality assurance at universities is a growing problem all around the world. Pakistan likewise saw the need to evaluate and enhance its higher education system in order to become more internationally competitive and to ensure that its academic programmes and research were up to par. To this end, the Pakistani government's Higher Education Commission set up the Quality Assurance Agency (QAA) to take the lead in improving the country's university system. Concerning its operations and the formulation of policies and initiatives to improve educational quality, the Quality Assurance Committee advises QAA. All colleges and universities, both public and private, have been able to set up Quality Enhancement Cells (QECs) because to the QAA's assistance. The National Quality Assurance Committee advises QECs on how to execute quality initiatives and policies. As part of its mission to provide excellent higher education, NFC IET established a Quality Enhancement Cell to oversee all initiatives pertaining to quality. In addition, separate quality assurance cells have been set up in every department.

VISION

Maintaining a level of education at NFC IET that is both excellent and competitive on a global scale by implementing best practises in quality assurance.

MISSION

To raise NFC IET educational and research standards to the most attainable levels on a global scale by developing & implementing quality enhancement policies and processes, evaluation & review of the existing policies and processes, and capacity building of the faculty / staff.

OBJECTIVES

- Adherence to the Higher Education Commission's Quality Assurance Framework in order to fulfil the requirements of high-quality research and education on a global scale.
- Establishment of an effective system of self-assessment of institute programs with the purpose of Quality Enhancement.
- Creating and carrying out protocols for NFC IET Institutional Internal Quality Audits.
- Conducting internal audits to guarantee that the quality of student and faculty support services, as well as research, continues to rise.
- Taking measures for capacity building of faculty / staff involved in quality assurance measures.
- Collection & provision of institute statistics for ranking by national / international agencies.
- Promoting collaboration with national and international universities / organizations.

RESPONSIBILITIES

- Dealing with Higher Education Commission in matters related to:
  - Quality Enhancement Policies and Programs
  - Self-Assessment Process: Reports, Executive Summaries, Corrective Actions, and Implementation Plan
  - Internal / External reviews and audits
  - Recognition of institute programs by HEC
- Providing data for Institute Ranking to QS, THE, and HEC
- Bench Marking Database & Institute Statistics on Education
- Facilitating the Accreditation Councils for department visits.
- Correspondence with International Quality Assurance Networks
- Processing the nominations for the National/ International Awards

the Political Map Reading Competition, an event aimed at promoting geopolitical awareness and educating young minds about the evolving political landscape of the world.

At our university, we believe that participating in sports not only promotes physical health and wellness, but also builds character, leadership, and team spirit. We organize various sports events throughout the academic year to provide opportunities for students to showcase their athletic abilities and enhance their overall university experience.At our university, we believe that sports play an important role in shaping the character and personalities of our students, and we are committed to providing them with the best opportunities to excel in this a

Financial Assistance

All the scholarships in the following categories are available for engineering students:

IET Merit Scholarships

IET has instituted merit scholarships for top position holders on the basis of results in all programs. In addition to merit scholarships, financial assistance is also available to needy students who excel in their studies and in their examinations. In addition to IET Scholarships, efforts are underway to attract talent scholarships from the industry for the top students to be awarded on the basis of their performance in engineering examinations.

Other Scholarships

These scholarships are awarded to such students who are needy and also show excellent results in their examinations. Some of the organizations offering financial assistance, in addition to NFC-IET, are:

M/s. Punjab Workers Welfare Board, Lahore.
M/s. Fauji Foundation Welfare Division, Rawalpindi
M/s. Gurmani Foundation, Lahore
Zila Council, Multan
Zila Council, Muzaffargarh
National Bank of Pakistan offers Qarz-e-Hasna to deserving students

Some other organizations that support needy students of NFC-IET are as follows:
Suncrops Group, Multan
Al-Hilal Vegetables, Multan

Though there are some possibilities for financial assistance, as mentioned above, IET does not guarantee any financial aid. The students and their guardians should note very clearly that they have to make their own arrangements for all financial obligations.

INDUSTRIAL LIAISON COMMITTEE

Dr. M. Kamran Liaqat Bhatti
Convener, Industrial Liaison Committee

Engr. Mujtaba Ashraf

Engr. Tahir Mahmood

Services

A productive interface between academia and industry is a critical requirement for inclusive growth. In such a quest to develop a strong association of institute with industry and technology, Industrial Liaison Committee has been formed by the Vice Chancellor. The Industrial liaison committee aims to foster close cooperation between industry and the institute through the Industrial Liaison Programme. This program will have the following scope of work:

- **Seminars**

To bridge the gap between industry and academia, ILC (Industrial Liaison committee), organizes monthly seminars for students to enrich the student's academic inputs with industry relevant information. Seminars are the pistons which drive the intellectual heart of the institute. Inviting eminent personalities who have achieved some feat in science and technology to take up some seminars for the students that will greatly help them interact with present and on-going advancements in the technical fields. It also gives them an opportunity to exhibit their skills and entrepreneurship ideas to their future employers.

- **Industrial Tours**

It is evident that Industrial/study tours are an essential part of the academic activity to help students learn Engineering activities being carried out in a commercial site plant Organization. Industrial visits are also essential in the development of practical and professional skills required by an engineer and an aid to prospective employment. Every year, IET spends a lot of funds and efforts for organizing industrial tours for first, second and third year students. Students are given an exciting opportunity to participate in intensive 5-7-day industrial visit to visit companies relating the diverse world of engineering whilst making in-depth discoveries about careers ranging from the communication sector to the automotive industries. The intellectually stimulating presentations and tours give students a unique opportunity to observe for themselves the practical aspects of engineering and witness how the different concepts they had previously studied are being applied in reality. To see the outcomes of these visits, an Industrial Tour report is also prepared by the students.

- **Internships**

In order to gain practical experience in an industrial organization, internships are considered essential for the students. 4-8 weeks of training is arranged by the institute for the students. The student is required to submit a brief report on the work carried out during industrial training and the management is requested to supply a report on the adaptability and progress of each student.

- **Graduate Hiring Opportunities**

The ultimate goal of a graduate engineer is to work as a practicing engineer. In today's competitive market place , NFC-IET is not only geared to develop students in building the necessary skills for successful careers but also facilitate students with industry opportunities that would expose them to various fields in their specific engineering discipline prior to graduation. Whenever Employers submitted job postings, the program facilitated the recruitment process by organizing on-campus employer information sessions and interviews & eventually

presenting job offers to students.

- **Career Advisory Services**

The Liaison Office helps students in exploring employment opportunities that match their abilities and in making informed career choices. For this purpose, it offers a variety of services and facilities. It organizes workshops and advisory sessions to promote skills needed for interpersonal self presentation, management of interviews, and preparing effective CVs. The faculty coordinator makes him/her available to the students to discuss issues relating to the planning and development of their careers. The office encourages employers to visit the Institute and conduct their recruitment tests and interviews on the campus. It maintains a library of literature of some organizations which are the future employers of the graduates.

- **Feedback Analysis**

Feedback surveys are statistically compiled once a year by the committee including graduate exit surveys, alumni feedback, employer's feedback, tours feedback, ILC feedback and internship feedback.

Success of IET depends on the quality of its products. Over the years, the institute has produced bright, innovative graduates employed at some of the most respectable firms all over the world. It hopes to produce graduates who distinguish themselves by their professional competence, humanistic outlook and ethical rectitude, pragmatic approach to problem-solving, and organizational and managerial skills. Given these attributes, they should be able to respond adequately to the needs of Pakistan and be   transformation. the vanguard of their techno-industrial

Contact Information
1. Mr. Zahid Hussain Qaisar
        Tel: 061-9220012-16   Ext:
2. Engr. Mujtaba Ashraf
        Tel: 061-9220012-16   Ext:2211
3. Engr. Tahir Mahmood
        Tel: 061-9220012-16   Ext: 2343

Our Employers
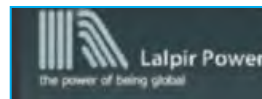
TREASURER OFFICE

M. Maghfoor Anwer Chughtai
MBA-Finance
Treasurer

Services

The Finance Department works under the supervision of "Treasurer ". This office is responsible for all Financial matters i.e receipt of fee & dues, payments, internal & external audit & preparation of financial Statements & Final Accounts.

Contact Information

M. Maghfoor Anwer Chughtai Treasurer	061-9220012-16 Ext: 5555 061-6302799 (Direct)
Faisal Amin Internal Auditor	061-9220012-16 Ext: 2276
Naveel Walayat Bhatti Accounts Assistant	061-9220012-16 Ext: 2303
Ms. Ishrat Maqsood Accounts Assistant	061-9220012-16 Ext: 2327
M. Rizwan Munawar Chughtai Accounts Clerk	061-9220012-16 Ext: 2320
Muhammad Tahir Fee Clerk (Fee Section)	061-9220012-16 Ext: 2203

Mr. Faisal Amin
Internal Auditor

M. Naveel Walayat Bhatti
Accounts Assistant

Ahsan Javed
Accounts Assistant

Ishrat Maqsood
Accounts Assistant

Hafiz Wasif Hassan
Accounts Assistant

M. Waseem Akram Shah
Accounts Assistant

M. Rizwan Munawar Chughtai
Accounts Clerk

Umair Hassan
Accounts Clerk

Muhammad Tahir
Fee Clerk

Qalab Ali
Fee Clerk

Muhammad Nadeem
Fee Clerk

Aamir Iqbal
Fee Clerk

Dues & Fee Structure*

Detail of Fees & Dues (for all categories)
(a) Fees & Dues to be deposited with Application Form:

Fee Type	All Engg. Programs & Architecture Design	BS Computer Science, Software Engg. & BS Artificial Intelligence	BBA, Bio-Medical Engg. Technology	BS Food Science & Technology, BS Fashion Design & BS Fine Arts	BS Chemistry, Physics, Criminology, & Environmental Science
Admission Fee *	Rs. 30,000	Rs. 15,000	Rs. 15,000	Rs. 15,000	Rs. 15,000
Application Processing Fee*	Rs. 2,000	Rs. 2,000	Rs. 2,000	Rs. 2,000	Rs. 2,000
Sub-Total-I	Rs. 32,000	Rs. 17,000	Rs. 17,000	Rs. 17,000	Rs. 17,000

(b) After confirmation of Admission (after display of Merit List):

Fee Type	All Engg. Programs & Architecture Design	BS Computer Science, Software Engg. & BS Artificial Intelligence	BBA, Bio-Medical Engg. Technology	BS Food Science & Technology, BS Fashion Design & BS Fine Arts	BS Chemistry, Physics, Criminology, & Environmental Science
Tuition Fee (for Three Months)	Rs. 39,030	Rs. 30,000	Rs. 22,980	Rs. 19,140	Rs. 13,905
Caution Money (Refundable)	Rs. 6,000	Rs. 6,000	Rs. 6,000	Rs. 6,000	Rs. 6,000
Registration Fees	Rs. 2,000	Rs. 2,000	Rs. 2,000	Rs. 2,000	Rs. 2,000
Alumni Contribution	Rs. 1,000	Rs. 1,000	Rs. 1,000	Rs. 1,000	Rs. 1,000
Student Functions	Rs. 2,000	Rs. 2,000	Rs. 2,000	Rs. 2,000	Rs. 2,000
IET Welfare Trust Contribution	Rs. 2,000	Rs. 2,000	Rs. 2,000	Rs. 2,000	Rs. 2,000
Annual Dues	Rs. 22,000	Rs. 22,000	Rs. 22,000	Rs. 22,000	Rs. 22,000
Sub-Total-II	Rs. 74,030	Rs. 65,000	Rs. 57,980	Rs. 54,140	Rs. 48,905
Grand Total (at the time of Admission)	Rs. 106,030	Rs. 82,000	Rs. 74,980	Rs. 71,140	Rs. 65,905

* Civil Engineering (after confirmation of Admission) Rs.80,030/- and Total Rs.112,030/-

Annual Dues:
For all programs except Civil Engineering Rs.22,000/-
For Civil Engineering Rs.28,000/-.(22,000/- Annual Fund + 6,000/- Survey Camp)

Tuition Fee:
- For all Engineering & B. Architecture is Rs.13,010/- per month.
- For BS(CS), BS (AI) and Software Engineering is Rs.10,000/- per month.
- For BBA & Bio-Medical Technology Program is Rs.7,660/- per month.
- For BS Fashion Design, Food Science & Tech.& Fine Arts is Rs.6,380/- per month
- For BS Physics, Chemistry, Environment Science and Criminology is Rs.4,635/- per month

Increase in Fee:
* The dues are subject to review from time to time. Tuition Fee will be increased @5% of its existing rate every year for all students.

Examination Fee:
Paper Money per semester per student Rs.4,000/-

Hostel Charges:
Hostel Fee for one year allotment will be 35,000/- per student per year.
Electricity charges for Home Appliances are given below:
(a)	Room-Coolers	(1 May - 30 Sep)	Rs.	3,000/month/room
(b)	Refrigerator	(1 Jan - 30 Dec)	Rs.	2,000/month/room
(c)	Dispenser	(1 Jan - 30 Dec)	Rs.	300/month/room
(d)	Microwave Oven	(Jan 01 to Dec 31)	Rs.	500/month/room

Note:
I) Mess security and mess dues are in addition to above charges.
ii) Mess security is Rs.5000/- (refundable)**
iii) Maximum stay of a student in the hostel shall be as per the degree period from the date of his/her admission in IET.

Appearance in Examination:
No student shall be allowed to appear in the Examination without formal clearance of the Accounts Department (Fee Section).

**Subject to production of original receipt.

Category "K & S" Candidates
An additional amount in Lump sum as overseas/self-supporting fees:
- Civil, Mechanical Engineering   Rs. 500,000/-
- BS (Computer Science), BS(AI), BS Software Engg.   Rs. 240,000/-
- Electrical, Chemical, Petroleum Engineering, BBA, B. Architecture and Bio-Medical Tech.   Rs. 100,000/-
- All other programs   Rs. 50,000/-

Note: (i) This Fee will be paid in 4 installments, 25% at the time of Admission, 25% each at 2nd, 3rd and 4th quarters respectively.
(ii) Students admitted in "K & S" category will also pay taxes as per Govt./FBR policies.

Dues payable alongwith Application Form*
All categories except "K & S":
- All Engg. & Architecture programs   Rs. 32,000
- All other Programs   Rs. 17,000

With "K & S" Categories

"K & S" Category for Civil and Mechanical Engineering	Rs.	157,000
"K & S" Category for Electrical, Chemical & Petroleum Engineering and B.Architecture	Rs.	57,000
"K & S" Category for BS (CS), BS(AI) and BS Software Engg.	Rs.	77,000
"K & S" Category for Bio-Medical Technology, BBA	Rs.	42,000
"K & S" Category all other programs	Rs.	29,500
Candidates applying all programs (all categories) (Subject to revision any time without notice)	Rs.	157,000

Schedule of Fee Payment

Quarter	Last Date
1st quarter	At the time of admission
2nd quarter	before December 10, 2024
3rd quarter	before March 10, 2025
4th quarter	before June 10, 2025

* **Note:** (i) Dues are to be paid between the 1st and the 10th of each quarter. A late fee will be charged for payments made after the due date, as follows:
- 1st to 10th day after due date   Rs.50/- per day
- 11th day to till end of 1st month, after due date   Rs.500/-
- 2nd month, after due date   Rs.750/-
- 3rd month, after due date   Rs.1,000/-

COMMERCIAL DEPARTMENT

Engr. Tafzeel Khaliq
Chairman Purchase Committee

Engr. Sadaqat Ali
Incharge Commercial

Mr. Sabahat Wazir Bukhari
Jr. Clerk

Mr. Ali Aon Muhammad
Jr. Clerk

Services of Commercial Department

The Commercial Department is responsible for buying goods & services from external source to IET. In addition to finding supplies and negotiating contracts for the supplies, Commercial department is also responsible for monitoring the supplier's performance, monitoring delivery times, quality, and maintains cost control strictly . The Commercial department is also responsible for all aspects of the bidding process.

Contact Information:

- Engr. Sadaqat Ali
  Incharge Commercial
  Direct: 061-630 2499,
  PABX: 061-9220012-16   Ext: 2317

SPORTS DEPARTMENT

Dr. Abdul Mannan
Chairman Sports Committee

Members of Sports Committee

Mrs. Shahida Rehman
Member

Engr. Tahir Mahmood Bhatti
Member

Mr. Khushnood Ali
Member

Services of Sports Department

"A healthy body keeps a healthy mind"

To achieve this target sports exercises are essential. The sports Committee provides the facilities required for the games like Cricket, Football, Badminton, Table Tennis etc. For the healthy and active life style of students a Fitness Gym is well equipped with Electric Trade Mill, Butterfly Machine, Recumbit Bike, Multiple Exercise Machine, Chest Press, Ab-king Machine and Dumble weight set etc.

The Sports Committee also organizes the annual sports week according to the scheduled academic calendar.

1. Dr. Suleman Khan   Chairman
2. Dr. Maham Hussain   Dy. Chairman
3. Engr. M. Nawaz Joiya   Member
4. Mrs. Shahida Rehman   Member
5. Engr. Tahir Hussain Bhatti Member
5. Mr. Khushnood Ali   Member/Secretary

DOCUMENT & IT SECTIONS

Engr. Dr. M. Kamran Liaqat Bhatti
Incharge Document/IT Sections

Mr. S.M. Ahsan Shah
Network Administrator

Engr. Ali Raza Manzoor
Programmer

Engr. Muhammad Junaid Tahir
Programmer

Muhammad Imran Khan
Assistant Network Admin.

Nazar Abbas
Assistant Document Section

Introduction

The IT Division is focused on delivering a wide range of high-quality IT Services throughout the campus to all Academicians, Staff & Students. Providing a smart & robust environment where everyone has easy access to all IT services round the clock. The IT Division also ensures a secure, reliable, and efficient IT environment where optimized results would be attained.

Vision

Our vision is to provide instant, efficient & reliable cutting-edge wireless information technology solution and services up to the satisfaction of our potential users.

Mission

The IT Division mission is to provide highest quality technology-based services & solutions that will elevate mission vision and goals of NFC-IET.

Services

We are responsible for installing and managing the IT infrastructure across the university, to maximize the throughput of university employees and learning of students.

The facilities under the umbrella of IT Division are:
- ❖ Network Administration
- ❖ System Administration
- ❖ Web Administration
- ❖ Email Administration
- ❖ Audio Visual Facilities
- ❖ Video Conferencing
- ❖ Committee Rooms connectivity
- ❖ Seminar Hall connectivity
- ❖ Internet Connectivity (PERN-II)
- ❖ Wireless Connectivity between Blocks
- ❖ Service Request Forms
- ❖ Biometric Attendance System
- ❖ Admission System
- ❖ Registration System
- ❖ Fee Vouchers Generation
- ❖ Examination Management System
- ❖ Online Admission System
- ❖ Budget Management System

CONTROLLER OFFICE

Engr. Rasool Ahmad
M.Sc. (Chem. Engg.)
Controller of Examinations

Engr. Sadaqat Ali
MSc (Electrical Engg)
Deputy Controller of Examinations

Services

The Examinations Office works under the supervision of Controller of Examinations. This office is responsible for preparing date sheets, holding semester examinations, maintenance & compilation of results, issuance of degrees, transcripts, result cards, and the general academic setup.

Contact Information

• Controller of Examinations:

    Tel: 061-9220012-16 Ext: 2249
    Direct: 061-6302788

• Deputy Controller of Examinations
    Tel: 061-9220012-16 Ext: 2349

• Office
    Tel: 061-9220012-16 Ext: 2244 & 2375

Syed Zeeshan Saleem
Sr. Assistant Examination

Tahawar Hussain
Assistant Examination

Amjad Ali
Data Entry Operator

Muhammad Zafar
Computer Operator

Syed Umair Kaleem Ahmad
PA to Controller

RULES & REGULATIONS FOR UNDERGRADUATE PROGRAMS

(As adopted by Bahauddin Zakariya University, Multan)

Requirements for Degree
1. The minimum duration of the B.Sc. Engineering degree programs shall not be less than four academic years.
2. No candidate shall be admitted to an Examination after the expiry of 07 academic years from the date of his admission in the Institute.
3. The medium of instructions and examinations shall be English for all subjects except Islamic Studies and Pakistan Studies for which the medium of instructions and examinations shall be either Urdu or English.
4. The courses of studies, the number of credit hours allotted to each course and the detailed syllabus shall be according to the proposals made by the Board of Studies concerned and approved by the Syndicate on the recommendations of the Board of Faculties and Academic Council.

Part-I (Theory Paper):
• Sessional Marks in Theory Papers may consists of attendance, Quiz, Sessional Tests or any other assignment as determined by the teacher concerned and shall carry 20% of the total marks allotted to Part-I of the subject. In each semester there will be a mid term of 30% marks which will be conducted by the teacher concerned under the semester system rules. The remaining 50% of the marks shall be allocated for the end-term written examination.

Part-II (Practical & Viva-Voce):
• Sessional work may consist of attendance, laboratory, design, quiz, studio work and any other assignment as determined by the teacher concerned and shall carry 50% of the total marks allocated to Part-II of a subject and the remaining 50% of the marks shall be for end term practical and Viva-Voce examinations.

Final Result of Each Semester
• Final result (GPA, SGPA & CGPA) will be calculated for each Semester as per Semester System rules.

Attendance Requirements
• The attendance requirement for appearing in Semester examination will be minimum 75% of the total lectures delivered.

Application for Examination
a. A candidate who wishes to seek admission to an examination shall submit an application in the prescribed form to the Controller of Examinations through the Head of Department.

A Candidate shall be admitted to the Degree if:
a. He has passed all the papers of the degree program in the relevant discipline, and,
b. He has attended and satisfactorily completed at least 04 to 06 weeks Industrial Training where applicable as Certified by the Vice Chancellor NFC Institute of Engineering & Technology, Multan.
c. A CGPA of 2.20 on scale of 4.00 at the completion of all course work as prescribed by the department.

Provisional Promotion of Higher Semester
a. All the BZU and NFC IET amended rules relating to Semester promotion/relegation/probation will be followed.
b. Student will have to submit an affidavit on provisional promotion to next Semester that if he fails to fulfill the condition of promotion, he will be relegated/dropped and he will not claim any compensation/refund of fee.

Examinations and Grading System

Theory Papers:
a) Sessional	20 Marks
b) Mid Term	30 Marks
c) End-term Exam	50 Marks

Practical & Viva-Voce:
a) Sessional	50 Marks
b) End-Term Exam	50 Marks

Note: Minimum Pass Marks for promotion to next semester are 50% (C-Grade), both in theory and practicals.

Grading
In rating of the students, three passing grades shall be used A,B,C and one failing grade F. In Terms of their numerical equivalence, the letter grades denote the following:

a) In rating of the students seven passing grades shall be used A+,A,B+,B,B-,C+ and C and one failing grade F. In Terms of their numerical equivalence, the letter grades denote the following:

Alphabetical Grade	Marks	G.P.A.
A+	90-100	4.00
A	80-89	3.70
B+	75-79	3.30
B	70-74	3.00
B-	65-69	2.70
C+	60-64	2.30
C	50-59	2.00

b) A cumulative grade point average (CGPA) shall be computed at the end of the course for all students.

Ready Reckoner Table

90-100	4.00	A+
89	3.90	A
88	3.90	A
87	3.90	A
86	3.90	A
85	3.80	A
84	3.80	A
83	3.80	A
82	3.70	A
81	3.70	A
80	3.70	A
79	3.60	B+
78	3.50	B+
77	3.40	B+
76	3.30	B+
75	3.30	B+
74	3.20	B
73	3.10	B
72	3.10	B
71	3.00	B
70	3.00	B
69	2.90	B-
68	2.80	B-
67	2.80	B-
66	2.70	B-
65	2.70	B-
64	2.60	C+
63	2.50	C+
62	2.40	C+
61	2.40	C+
60	2.30	C+
59	2.20	C
58	2.20	C
57	2.20	C
56	2.20	C
55	2.10	C
54	2.10	C
53	2.10	C
52	2.00	C
51	2.00	C
50	2.00	C
Below 50		Fail
Incomplete		I

Good Standing

i) In order to remain on the rolls of the Department, a student has to continuously maintain "Good Standing" namely a satisfactory standard of attendance and academic performance, as well as of conduct and discipline.

ii) To remain in "Good Standing" at the end of first semester a student besides meeting attendance and conduct requirements, must also maintain a minimum CGPA of 2.00 on a cumulative basis. However, a student having CGPA less than 2.0 but greater than 1.75 will be on probation. Any student with a CGPA of less than 1.75 will be dropped from the roll of the Department forthwith.

iii) At the end of the first Semester, a student must obtain a minimum grade point average (SGPA) of 2.00 to be promoted to the second Semester. In case a student is able to obtain GPA of 1.75 or more, but less than 2.00 he will be promoted to the second semester on probation. This opportunity is provided only in Ist Semester.

iv) (a) At the end of each Semester, other than Ist semester, a student must obtain a minimum cumulative grade point average (CGPA) of 2.00 and must also pass at least 50% of the courses taken by him in the semester in order to be promoted to next Semester. If any of the proceeding two conditions is not complied with by a student, he shall be removed from the rolls of the Department.

(b) However, if a student fails to comply with any of the conditions in third & subsequent semesters in four years program, he will be detained in that semester & he will repeat the semester. He will be promoted to the next semester on attaining a CGPA of 2.00. The students will have to complete their courses within the stipulated time (07 academic years) for completion of degree.

v) A student shall be deemed to have lost his/her "Good Standing" if his conduct and behaviour is found objectionable from the disciplinary point of view.

Incomplete Grade

No make up Examination shall be given to a student who does not appear in Mid-Term Examination. In case a student is unable to appear in one or more courses in the End-Term Examination of Semester on medical ground, he may be allowed to appear in the special final Examination to be arranged by the Department provided:

i) He/She fulfills the conditions of having attended the prescribed number of lectures as laid down in the

Regulations.
ii) He/She is laid down as an indoor patient of a recognized <u>hospital, or if he/she is not hospitalized as defined above,</u> the candidate shall be examined by the Medical Superintendent of Civil Hospital who may certify the inability of the student to appear in the examination or otherwise.
iii) Application of the student must reach the Department on or before the day of Examination. Late application shall not be entertained
iv) Such a student shall be given incomplete grade ("I" Grade). He shall be required to appear in the special End-Term examination of that Semester to be held within Four weeks from the Commencement of the next Semester.
v) He shall also be required to follow the schedule of the next Semester.
vi) The student shall have to pay prescribed fee per course for special End-Term examination.

Change of Course
i) No student shall change a course except with the written approval/reassignment by the Head of Department. The time period for such a change shall be 07 days from the commencement of the course.
ii) The Department may switch the courses of different Semester according to needs or the availability of teaching facilities.

Semester Break
In case a student (other than first semester student) due to some unavoidable circumstances (prolonged illness or such other genuine reason) is unable to continue his studies, he/she may apply for a semester break. The case will be put up to the departmental examination committee for consideration. In case, the committee recommends it, semester break will be allowed. The semester break will be allowed for a maximum period of one year. The total time period for completion of the programme will however, remain the same as already provided in rules.

STUDENTS CONDUCT & DISCIPLINE

Rules Relating to Discipline
No student shall;
(i) utter, do, or propagate anything repugnant to Islam within and outside the precincts of the Institute,
(ii) say or do anything which might adversely affect the honour and prestige of Pakistan or Institute and Teachers,
(iii) smoke in the Classroom, Laboratory, Workshop, Library and Examination Hall.
(iv) form, or associate with an organization/ Society/Club, or any other body, promoting cast distinctions and inciting parochial/linguistic/ regional feeling,
(v) organise, or hold any function within the precincts of the Institute except with prior approval of the Competent Authority,
(vi) collect money or receive donations or pecuniary assistance for or on behalf of the Institute except with the written permission of the Competent Authority,
(vii) stage, incite, or participate, in a walkout, strike or any other form of agitation which might create or is likely to create law and order problem for the Institute and affect or is likely to affect its smooth functioning,
(viii) indulge in immoral activities, use indecent language, wear immodest dress, make indecent remarks, jokes or gestures or behave in an improper manner,
(ix) cause disturbance to others,
(x) keep or carry weapons, narcotics, immoral or subversive literature,
(xi) disturb peace and tranquility of the Institute,
(xii) use insalutary or abusive language or resort to violence against a fellow student or employee of the Institute,
(xiii) attend the class work/practical without wearing prescribed dress / Protective during the course of his studies at the Institute.
(xiv) indulge himself/herself in copying during the Examination/Tests and unlawful help to any other person during the Examinations/Tests.

Disciplinary Action
Disciplinary action by the Vice Chancellor of the Institute/ Disciplinary Committee against the students may be taken in one or more of the following forms depending upon the severity of the offence;
(i) A written warning may be issued to the students concerned and a copy of the same may be displayed on the Notice Board.
(ii) The matter may be reported to the Parents/ Guardians and they may be called, if necessary.
(iii) A student may be fined. The fine imposed shall have to be deposited with the Treasurer under intimation to the Vice Chancellor/Chairman Disciplinary Committee (constituted by the Vice Chancellor) as the case may be.
(iv) A student may be placed on probation for a fixed period not exceeding 6 months. If during the period of probation he/she fails to improve his/her conduct, he/she may be rusticated or expelled.

Rustication and Expulsion
Rustication, whenever, imposed on a student, shall always mean the loss of one academic year in so far as his/her appearance at a University examination is concerned. the period of absence from the Institute will, however, depend upon the time of the year when the penalty is imposed. The student under rustication may at the discretion of the Vice Chancellor of the Institute be permitted to rejoin the class in the beginning of the next academic year.
Notwithstanding anything to the contrary contained in

the regulations above, a student shall continue to be under the disciplinary jurisdiction of the Vice Chancellor of the Institute till the completion of his final year examination including the practicals and submission of the thesis research report, design project etc. and final clearance from the Institute.

Cancellation of Admission

- If a student fails to attend classes for one week continuously after the start of the session, his/her admission shall stand cancelled automatically without any notice, and his/her seat will be offered to candidate next in merit.
- If a student is unable to attend classes for ten days or more during the session without getting prior permission from the head of department, his/her admission shall also stand cancelled.
- The NFC-IET Management reserves the right to cancel the admission of any student if he fails to abide by the disciplinary rules and regulations of the Institute issued by the Institute's Management from time to time.

Code of Honour

1. All Muslim Students must show, in words and in deeds, their full faith in Islam.
2. All students must have faith in and respect for the ideology of Pakistan.
3. All students must in matters of religion, respect the convictions of others.
4. Every student is expected to;
   (i) be loyal to Pakistan,
   (ii) obey the law of the Land as well as the Rules and Regulations of the Institute.
   (iii) maintain law and order as well as the dignity and prestige of the Alma Mater,
   (iv) have respect for morality and personal honour and rights of others.
   (v) practice honesty and integrity in dealings with fellow students, teachers and all others both on and off the Institute.
   (vi) help in protecting the life, dignity, honour and the property of the Institute and that of the employees and fellow students,
   (vii) respect teachers, all elders and persons in authority in the Institute.
   (viii) work hard and complete the course of study within the prescribed period, and
   (ix) endeavour to positively contribute towards creating an atmosphere conducive to healthy academic pursuit.

Uniform

All the students from session 2015 onward should come to the Institute in approved uniform. During practical in laboratories students of B.Sc. Chemical Engineering are required to wear white cotton overalls. The students are expected to wear white Safety Helmets while working at Miniature Plant and Safety Goggles while working at Engineering Workshop. Overalls, Helmets and Goggles are available at prescribed stores in Multan city.

Punctuality

The Institute expects its students to keep excellent record of class attendance. However, in case of emergency/ sickness, students may take leave from the Head of the department by submitting an application supported by Medical Certificate in case of sickness, and by requesting him/her in writing in case of urgent work. Any unauthorized absence from class work may attract a fine of Rs.20/= per period.

Abbreviation/Definitions

(a) 'BZU' is an abbreviation for the Bahauddin Zakariya University, Multan.

(b) 'IET' is an abbreviation for the NFC Institute of Engineering & Technology, Multan.

(c) 'VC' is an abbreviation for the Vice-Chancellor of IET.

(d) 'Faculty' means the academic staff of the IET.

(e) 'Subject' means a course of studies as prescribed in the detailed Syllabi, whose successful completion shall be the requirement of B.Sc. Engineering degree in the relevant discipline. It shall consist of Part-I (Theory) and/or Part-II (Sessional Work, Practical and Viva-Voce). Each part shall be considered a separate paper for the purpose of Examination.

(f) 'internal examiner' normally means the teacher/person appointed by the Competent Authority who has been teaching the subject to the class/section during the semester for which the examination is being conducted.

(g) 'External Examiner' means a person appointed by the Competent Authority, holding suitable qualifications in the relevant discipline who is neither a teacher in the IET nor has taught the subject to the class/section during the semester for which the examination is being held.

(h) The person 'he' and its derivatives are used for both male and female persons.

ADMISSION SECTION

Engr. Rasool Ahmad
Chairman, Admission Committee

Services

The Admission Committee works under the supervision of Chairman Admission Committee. This office is responsible for collection of Admission Forms, display of Merit List and all functions related to the Admission.

Dr. Kamran Liaqat Bhatti
Associate Professor

Dr. M. Hafiz Azib
Assistant Professor

Engr. Muhammad Omer
Lecturer

Contact Information

- Engr. Rasool Ahmad
  Tel: 061-9220012-16   Ext: 2372

- Engr. Muhammad Omer
  Tel: 061-9220012-16   Ext: 2231

- Admission Cell

  - Mr. Muhammad Arshad Malik
    Tel: 061 -9220012-16   Ext: 2223
    Tel: 061-9220286

  - Mr. Qamar Hussain Bhatti
    Tel: 061-9220012-16   Ext: 2278

  - Mr. Babar Masoomy
    Tel: 061-9220012-16   Ext: 2278

  Email: admissions@nfciet.edu.pk

Mr. Malik Muhammad Arshad

Mr. Qamar Hussain Bhatti

Mr. Babar Masoomy

Mr. Muhammad Zahid

ELIGIBILITY CRITERIA

Program	Qualification Required	Minimum % Marks	Entry Test
B.Sc. Engineering Programe	F.Sc. Pre Engineering (Physics, Chemistry, Math), ICS or D.A.E. in relevant Discipline	60% in F.Sc. or D.A.E.	ECAT/HEC/ IET Entry Test
B. Architecture	F.Sc. Pre-Engineering, Pre-Medical, ICS, General Science or DAE (Civil/ Architecture) on Reserved Seats	50% aggregate (Inter + DAT)	IET Test Only
BS Computer Science, BS Software Engineering, BS Artificial Intelligence	F.Sc. Pre-Engineering, Pre-Medical, ICS, General Science or DAE	50% in Intermediate or equivalent	ECAT/NAT/HEC/ IET Entry Test
BS Environmental Science, Physics and Chemistry	F.Sc. Pre-Engineering, Pre-Medical, I.Com., ICS, General Science or DAE in Electrical, Electronics & Mechanical	45% in F.Sc. or D.A.E.	ECAT/NAT/HEC/ IET Entry Test
BS Bio-Medical Engineering Technology BS Food Science & Technology	F.Sc. Pre-Medical, Pre-Engg., ICS, General Science or DAE in Relevant field	50% in F.Sc. or D.A.E.	ECAT/NAT/HEC/ IET Entry Test
BD Fashion Design, BS Criminology, BBA, BS Fine Arts	F.Sc., ICS, F.A., or I.Com General Science	45% in Intermediate	ECAT/NAT/HEC/ IET Entry Test

Note: (i) In case any candidate did not attempted ECAT for engg., he shall be provided an opportunity to appear in NFC-IET Entry Test.
(ii) In case any candidate attempted both ECAT or NAT Test, the higher score shall be considered for merit determination.
(iii) Provisional Admission will be offered on First Year basis subject to providing undertaking that candidate completely qualifies the eligibility criteria for admission. The Admission Committee will reserve the right to cancel all such admissions that do not meet the prescribed eligibility criteria.
(iv) Students from other than Punjab can provide Entry Test of main UETs of their provinces/region (for detail contact Admission Cell)

Determination of Merit

1) Matriculation marks (15% weightage)
2) Intermediate marks (50% weightage)
3) Entry Test marks (35% weightage)

Note: Provisional admissions based on F.Sc. or equivalent (First year marks will be offered.
In case of two or more applicant have equal percentage of marks (upto three places of decimal) in the comparative merit, the order of merit between them shall be determined in following preferences:
a) Matriculation marks
b) Intermediate marks
c) Entry Test Marks
d) Age (candidate older in age being treated as higher in merit)

Entry Test

- NFC-IET will conduct two Entry Tests for admission session 2024 **(First Entry Test: 08-09 June, 2024 and Second Entry Test: 20-21 July, 2024)**
- For all programs, ECAT (conducted by UET, Lahore) or NAT (conducted by NTS).
- B-Architechture Program department aptitude test conducted in NFC-IET.
- If a student attempted more than one Entry Test, highest %age will be counted to merit determination.

RELEVANT DISCIPLINES OF DAEs
FOR ADMISSION IN BACHELOR OR ENGINEERING PROGRAMS

Sr. #	Engineering Programs	Relevant Disciplines	
1.	Civil Engineering	i. Civil ii. Land & Mine Surveying	iii. Architecture
2.	Mechanical Engineering	i. Mechanical ii. Mechanical (Power) iii. Mechanical (Production) iv. Precision Mechanical & Instrument	v. Auto & Diesel Technology vi. Dies & Mould vii. Refrigeration and Air Conditioning viii. Automation
3.	Electrical Engineering - Power - Electronics - Computer Systems	i. Electrical ii. Telecommunication iii. Electronics iv. Avionics	v. Instrumentation vi. Information Technology vii. Precision Mechanical & Instrument
4.	Chemical Engineering	i. Chemical ii. Chemical Processing Technology iii. Chemical (Sugar Technology)	iv. Petrochemical v. Petroleum
5.	Petroleum & Gas Engineering	i. Chemical ii. Petrochemical iii. Petroleum	

Choice of Disciplines
Candidate will have to mention his/ her preference for different programs. In case candidate is interested in only one or two of the programs then he/ she should indicate on the application form accordingly. Preference once given will not be ordinarily changed except in inevitable cases provided merit is not disturbed. A re-processing fee of PKR. 1000 will have to be paid in each case. Please put a cross (X) against discipline in which you are not interested.

Category "A" through "J"
It is based on comparative merit against domicile of candidate. The candidates applying on these categories must submit an attested copy of their domicile certificate along with the application form;

otherwise their application form will be rejected. For Category-H (Balochistan) candidates who are under 21 years of age must submit an attested copy of domicile certificate of their father showing the candidates name and age along with the application form, failing which their application form will be rejected. Those applying against B categories must also apply against category 'A'.

Category "K" (Foreigners/Overseas Pakistanis)
It is based on comparative merit irrespective of Nationality or domicile. Foreign Nationals can also apply against this category and are required to provide proof of equivalence of their qualifications and also clearance from Economic Affair Division, Govt. of Pakistan.

Candidate with Pakistani nationality applying on overseas category (K) shall have to provide copy of Passport with valid working visa of his/her parents/Guardian or real brother/sister and submit it along with the application form failing which he/she not be considered for admission on category "K" overseas. Overseas Fee for Engineering & BS programs are as follows:

- Civil, Mechanical Engineering   Rs.   500,000/-
- BS (Computer Science), BS(AI), BS Software Engg.   Rs.   240,000/-
- Electrical, Chemical, Petroleum Engineering, BBA,   Rs.   100,000/-
  B. Architecture and Bio-Medical Tech.
- All other programs   Rs.   50,000/-

Note:
1. Candidate in this category will pay above mention fee plus Normal Fee of the programs and Govt. Taxes as per FBR policies.

Category "N" (Professional Engineers)
It is also based on comparative merit within the category. Valid registration of Pakistan Engineering Council is required from father/Mother in order of priority of candidate applying against category "N".

Category "O "
These seats are reserved for real sons/daughters, real brothers/sisters, real nephew/nieces (son and Daughter of real brother and sister) and nephew/nieces (son and daughter of first cousins) in order of priority of NFC IET regular/Deputation/ Contract basis, working/ex-Employees in order of priority. Minimum Service for in service employee/Ex-employee is 5 years of service at NFC IET Multan. Candidates must fill in a Performa (available at Admission Cell of NFC IET) and submit it along with the application form. Also such application should be duly signed by the IET Employee and verified by Registrar.

Category "P"
Reserved for nominee of children of employee of armed forces. GHQ shall nominate the candidates for admission after verification of their credentials which shall be sent to admission committee for final approval two weeks before commencement of class work.

Note:
a. All nominations on category of "P" should be received two weeks before start of class work, otherwise IET reserved the right to fill these seats amongst the remaining candidates of Categories.
b. Candidates applying against category M, N, O & P seats must also apply against respective provincial open seats.
c. For "O" category fee of real son or the daughter of employee will be normal fee and for all other nominees will be self-supporting fee.

Category "Q" (B.Tech (Hons) & BS Technology) For admission against seats reserved for B.Tech (Hons) & B.S. Technologies the applicant should have passed the D.A.E. examination from a Board of Technical Education in the relevant technology with 60% Marks or F.Sc. Pre Engineering with 60% Marks. The seats reserved in this category are on all Pakistan bases in engineering programs. Candidate admitted in this category are eligible for admission to 3 Semester of B.Sc. Engineering in relevant discipline. Such candidates wait for start of 3rd Semester in the session in which he/she admitted.

Category "S" (Self Supporting)
Some seats are offered on self-support basis. The eligibility for Self-finance seats is payment of under noted schedule in addition to meeting other eligibility conditions. This amount is not refunded in case of candidate is offered admission against the category. Fee for Engineering & BS programs are as follows:

Note:
1. Candidate in this category will pay above mention fee plus Normal Fee of the programs and Govt. Taxes as per FBR policies.

Application Procedure
The application form for all programs are enclosed as in a prospectus. The candidate may apply against many categories as he/she desires. In such case he/she must indicate preference on the application form.

Un-Utilized Seats
Decision regarding un-utilized seats in each category shall be made by the admission committee.

Variation in Seats
The Admission Committee may exercise their right at any time to increase or decrease the number of seats allocated to any category or create/abolish any category and there shall be no appeal against such a decision. Rules applicable to admission will also be applicable to such variation.

Equivalent Examinations
The following examinations are considered as equivalent to the Higher Secondary School Certificate Examination with Chemistry, Mathematics and Physics of the Pakistan boards of intermediate and secondary education:

1. Intermediate (Pre-engineering) examinations of the board of intermediate and secondary Education, Azad Kashmir.
2. Cambridge Overseas Higher Secondary Certificate with Physics, Chemistry and Mathematics.
3. British General Certificate of Education (Advanced Level) with physics, chemistry and Mathematics.
4. F.Sc. (Pre-Medical) with mathematics as an additional subject.
5. 12th Grade of American school

Provisions about admission on the basis of B.Sc. degree

Given the qualifications and restrictions stated below, a person who is not over age, is eligible for admission to the Bachelor's course at IET on the basis of degree of Bachelor of Science. A person possessing a B.Sc. degree is NOT eligible for admission to the Bachelor degree engineering course at the IET unless he has also passed F.Sc. (pre-engineering) securing at least 60% marks.

Scope of Eligibility for B.Sc.'s with F.Sc. (Pre-Engineering)

For admission to the B.Sc. course in engineering an applicant may have passed B.Sc. examination with any combination.

Age Restrictions Criteria

A candidate must not have attained the age given below on the last date fixed for receipt of applications for admission to all undergraduate disciplines:
i. 26 years (On the basis of FSc or equivalent)
ii. 28 years (On the basis of Bsc)
iii. 42 years (On the basis of DAE, B.Tech (Hon) or B.S. Technology)

Employee Candidates

Employed candidates shall have to take full leave from their organization and provide NOC for confirmation of admission.

Medical Fitness

All candidates will furnish a certificate from a registered medical practitioner, declaring that they do not have any serious disease with may be harmful to them or others during the course of their studies at IET.

DETERMINATION OF MERITS

Examination Treated Par

for purposes of admission to the bachelor degree courses and the determination of merit the following examination are treated at par;
a) F.Sc. (pre-engineering)
b) Cambridge overseas Higher School Certificate with physics, chemistry and mathematics

c) British General Certificate of Education (advance level physics, chemistry and mathematics). The comparative merits of the applicant are determined on the basis of marks obtained by them in these examinations plus marks obtained in entry test.

Highest percentage of marks counted

If an applicant has passed more than one of the above examinations/Entry Test, his position on the merit list is determined on the basis of the examination in which he has the highest Percentage of the marks

Deduction of marks For examination passed by part/subject improved

If an applicant has passed an examination by parts or subject improve, (5) marks has deducted from his aggregate marks. While determining his/her merit Merits of F.Sc.'s (Pre-Medical) with Mathematics in determining the merit of an applicant having F.Sc. (Pre Medical) with mathematic as an additional subject;

a) It is deemed that he has passed the examination by parts as such 5 marks shall be detected from his/her aggregate marks for the determination of his/her merit.
b) The marks obtained in the subject of biology are replaced by those obtained in the Mathematics

Merits of 12th Grade of American School

To determine the merit of applicant who has passed the 12th grade of the American (with mathematics, physics, and chemistry) the aggregate marks obtained by him are reduced to 85/100 (as per IBCC equivalent)

Merits of B.Tech (Hons) Through Semester System

Candidates having passed their B.Tech (Hons) degree through semester system must get their CGPA's converted to %age marks from their respective institutes. The %age marks shall be multiplied by 0.85 to calculate the marks for the merit list. Candidate who submit their CGPA's without getting them converted to %age marks shall not be considered for admission on B.Tech (Hons) basis.

Credit for Hafiz-e-Quran

A Hafiz-e-Quran will be credited 10 marks for determining the overall merits. A certificate from recognized institution and passing oral test arranged by NFC IET Multan is required.

Determination of merits in case of equal percentage

If two or more applicants have equal percentage of marks (upto three places of decimal) in the comparative merit, the order of merit between them shall be determined in following preferences:
1) Matriculation Marks
2) Age (older in age) treated higher in merit.

Seat Break-up of Engineering Program
(Subject to approval of the Admission Committee)

	Category	CHEMICAL	ELECTRICAL with specialization in: (Computer, Electronic & Power)*	MECHANICAL	CIVIL	PETROLEUM & GAS
Punjab	A	24	24	08	08	08
Multan, Bahawalpur & DG Khan Division	B	12	12	04	04	04
Sindh	E	09	09	03	03	03
Khyber Pakhtoonkhawa	G	06	06	02	02	02
Baluchistan	H	06	06	02	02	02
FATA	I	06	06	02	02	02
AJK/PATA	J	03	03	01	01	01
Overseas Pakistanis	K	09	09	02	02	02
Female (All Pakistan Basis)	M	03	03	01	01	01
Professional Engineers	N	03	03	01	01	01
NFC-IET Employees	O	07	07	04	04	04
Armed Forces	P	02	02	01	01	01
B. Tech (Hon)/BS Technologies	Q	03	03	01	01	01
Self Supporting	S	27	27	08	08	08
TOTAL		**120**	**120**	**40**	**40**	**40**

* Admission in Electrical Engineering will be overall basis. Distribution in specialization will be after 2nd year on the basis of overall performance in 2 years and preference given by student within their categories.

Seat Break-up of
B.S. Engineering Technologies
(Subject to approval of the Admission Committee)

	Category	Bio-Medical Engg. Technology	BS Food Science & Technology
Punjab	A	12	12
Multan, Bahawalpur & DG Khan Division	B	08	08
Sindh	E	04	03
Khyber Pakhtoonkhawa	G	03	02
Baluchistan	H	04	04
FATA	I	02	01
AJK/PATA	J	01	01
Overseas Pakistanis	K	01	01
Female (All Pakistan Basis)	M	01	01
IET Employees	O	04	03
Self Supporting	S	05	04
TOTAL		**45**	**40**

Seat Break-up of
Science Programs
(Subject to approval of the Admission Committee)

	Category	Archi-Tecture Design	BS(CS)	BBA	B. Fashion Design/Fine Arts	Criminology/ BS(ES)	BS Physics/ Chemistry	BS Soft.Engg.	BS (AI)
Punjab	A	09	40	14	08	08	08	18	09
Multan, Bahawalpur & DG Khan Division	B	05	20	10	06	06	06	12	06
Sindh	E	02	12	04	02	02	02	04	02
Khyber Pakhtoonkhawa	G	01	10	02	01	01	01	02	01
Baluchistan	H	02	20	04	02	02	02	04	02
FATA	I	02	08	02	02	02	02	04	02
AJK/PATA	J	02	08	02	01	01	01	02	01
Overseas Pakistanis	K	01	12	05	01	01	01	04	02
DAE	L	05	-	-	-	-	-	-	-
Female (All Pakistan Basis)	M	02	15	04	01	01	01	03	01
IET Employees	O	05	15	05	05	05	05	05	03
Armed Forces	P	01	05	01	01	01	01	02	01
Self Supporting	S	13	100	25	10	10	10	40	20
TOTAL		50	250	80	40	40	40	100	50

CALENDAR OF ACTIVITIES

Admission Schedule

✉ **Last date for First Entry Test Registration   06.06.2024**
☞ **First Entry Test   08-09 June, 2024**
✉ **Last date for Second Entry Test Registration   18.07.2024**
☞ **Second Entry Test   20-21 July, 2024**

LAST DATE FOR RECEIPT OF APPLICATIONS WITH DUES
05.08.2024

Note:
1. The schedule can be revised on sole description of IET Admission Committee, if so required

COMMENCEMENT OF CLASS
02.09.2024

ACADEMIC SCHEDULE

* First Semester   September 2024 - January 2025

* Second Semester   February - June 2025

* Summer Semester   July - August 2025

CALENDAR OF ACTIVITIES MS PROGRAM

Admission Schedule

✉ **Last date for receipt of applications   03.09.2024
   with dues**

☞ **Entry Test   12.09.2024**

☞ **Interview   24.09.2024
                                                    to   25.09.2024**

☞ Display of Merit List   08.10.2024

☞ Start of Classwork   18.10.2024

* Email: admission@nfciet.edu.pk

Whatsapp: 0319-666 5706

TERMS & CONDITIONS

1. The candidates who are not overage and are seeking admission in Engineering Program and scoring 60% marks or more in F.Sc., Pre-Engineering/DAE/ICS/ B.Tech (Hons) or equivalent examinations and appeared in ECAT/NTS/ NFC-IET Test becomes eligible for admission. **As such, the eligible candidate should deposit the dues alongwith his application form on time. No application form shall be accepted without the dues.**

2. A candidate seeking admission in engineering program and securing less than 60% in F.Sc./DAE etc. becomes ineligible. Applications of ineligible candidates shall not be accepted.

3. The candidates seeking admission in BD Fashion Design, BS Criminology, BS Sciences, and BBA programs and   scoring 45% or more in F.Sc. Pre-Engineering/Pre-Medical/ DAE/Intermediate with Computer Science/General Science/Commerce or equivalent and appeared in ECAT/NAT (NTS) becomes eligible for admission. The eligible candidate should deposit the dues alongwith the application form on time. Application forms shall not be accepted without the dues.

4. Overseas candidates may send their Application Forms through online/e-mail till last date and provide photocopies of the draft and testimonials besides showing original certificates at the time of admission.

5. All Candidates should bring their original testimonials for submission on or **before 05.08.2024** also deposits remaining dues for admission.

6. **Erroneous admission due to typographical/ computer error will be corrected accordingly and candidate is bound to accept the decision.**

7. **It should be clearly understood that the dues deposited shall be refunded strictly in accordance with refund policy under lined below.**

8. **It will be candidate's own responsibility to get registered in relevant Entry Test.**

9. **Candidates applying in engineering as well as non-engineering programme could give NFC-IET Entry Test.**

REFUND POLICY

As per HEC policy:	Letter No.10-1/HEC/A&C/2015/6542 Dated: December 7, 2015
Full (100%) Fee Refund except processing fee	- Upto 7th day of commencement of classes.
Half (50%) Fee Refund except processing fee	- From 8th - 15th day of commencement of classes
No Fee (0%) Refund Except caution Money	- From 16th day of commencement of classes

CHECK LIST OF
Documents to be attached with the Application Form

1. Attested photocopy of Matric/Equivalent Certificate ☐

2. Attested photocopy of F.Sc./Equivalent Certificate. ☐

3. Attested photocopy of B.Sc./Equivalent Certificate (for MS Programs) ☐

4. Recent Passport Size Photograph (3 Nos.) with your name and Form No. on the back of photo. ☐

5. Medical Certificate from a Registered Medical Practitioner declaring the Candidate Fit (physically & mentally) for the course. ☐

6. Attested photocopy of Hafiz-e-Quran Certificate ☐

7. **a)** **Attested photocopy of Domicile Certificate. The candidate must submit an attested photocopy of his/her domicile certificate alongwith the application form, otherwise his/her application form will be rejected.** ☐

   b) **For candidates who are under 21 years of age and are applying on Balochistan seat (category H), an attested copy of domicile certificate of their Father, showing the candidates name and age must be submitted with the application form, otherwise their application form will be rejected.** ☐

8. **For the candidates applying on the overseas seats (category-K) attested photo copies of the passport and work permit of their parents/brother/sister/guardian must be attached with the application form, failing which their admission will not be considered on category-K seats.** ☐

9. Proof of Registration of parent with Pakistan Engg. Council (for category N). ☐

10. **For category-O (IET employees) duly filled in performa must be attached. Performa is available in the admission cell of NFC-IET, Multan.** ☐

11. **NOC from employer/organization in case of any employment.** ☐

12. Attested copy of Entry Test Result ☐

OFFICE OF RESEARCH, INNOVATION, & COMMERCIALIZATION (ORIC)

Dr. Sadiq Hussain
ORIC Chair

Dr. Kamran Liaqat Bhatti
ORIC Member

Engr. Nasrullah Khan Babar
ORIC Member

Dr. Zulkarnain Abbas
ORIC Member

Dr. Sheraz Ahmed
ORIC Member

Dr. Naeem Aslam
ORIC Member

Dr. Sana ur Rehman
ORIC Member

Introduction

Under the guidance of the Higher Education Commission (HEC), NFC IET created the Office of Research, Innovation & Commercialization (ORIC) in January 2022. Academic and research units are required to have all funded research activities overseen by ORIC. Researchers at NFC IET, as well as sponsors and funders from across the world, may connect via the ORIC. Memorandums of Understanding (MoUs), unrestricted funds, travel grants, sponsored conferences, workshops, and seminars; consulting assignments; educational and service activities; and any other contracts for initiatives supported externally are addressed here.

VISION

To evolve NFC(IET) into a world class Centre of Excellence among Higher Education Institutions, leading the transformation of Pakistan towards a rapidly developing Knowledge Economy to realize the national objective of a progressive and prosperous country among comity of nations.

MISSION

- To develop NFC-IET as a Comprehensive, Academic and Research led university with a focus on Creativity, Innovation and Entrepreneurship so as to amicably negotiate Social, Economic and Environmental challenges faced by the country.
- Empower students to develop their full potential, acquiring leadership and social skills, to act as agents of change within the society.
- Improve global visibility by enhancing mutually beneficial linkages with international organisations and partner universities.
- Ensure conducive learning and working environment for students and staff at par with international standards.

CORE VALUES

- **Pursuit of Excellence**
- **Integrity**
- **Diversity & inclusivity**
- **Social impact**
- **Roles, responsibilities and services offered at oric**

NFC INSTITUTE OF ENGINEERING & TECHNOLOGY
FEDERAL DEGREE AWARDING INSTITUTE

NFC IET
MULTAN-PAKISTAN

Post Graduate Programs

Prospectus
2024

www.nfciet.edu.pk

Dr. M. Kamran Liaqat Bhatti
Director Postgraduate Programmes

Post Graduate Studies Program

The Institute started the Post Graduate Studies Program in the year 2016. The program has been asserting very encouraging responses from aspirants since its inception. All the MS programs at the Institute are running with prior approval from the Higher Education Commission (HEC) of Pakistan, and IET is only maintaining all the requirements of HEC to keep the program's validity at all times. The Program aims to educate and train next-generation science and engineering professionals. It provides students with an intellectual stimulus for advanced study courses. The Institute emphasizes creative thinking, problem-solving, and research findings for academics and industrial applications. The Institute specially designs curriculums to enable graduates to become adept in developing and applying research techniques and in interpreting information via data collection derived from research.

Dr. Naeem Aslam
Coordinator MS CS

Dr. Syed Safdar Raza
Coordinator MS EPE

Engr. Dr. Nadeem Amin
Coordinator MS CHEM

Engr. Dr. Zulkarnain Abbas
Coordinator MS MECH

Ms. Raisham Hayee
Coordinator MBA

Dr. Syed Adnan Raheel Shah
Coordinator MS Civil

MS Chemical Engineering

Introduction:

Chemical Engineering involves and comprehends design and maintenance of chemical plants and brings out capabilities of chemical processes for transforming raw materials into valuables. This includes union of knowledge from applied chemistry and engineering for the production of useful products. This branch of engineering is versatile discipline comprehending areas from biotechnology and nanotechnology to mineral processing. It covers various areas in mineral based industries, petrochemical plants, pharmaceuticals, synthetic fibers and petroleum refining plans etc. Because of industrial expansion and scarcity of resources, the scope of chemical engineering is stretched out. The institute is envisioned to furnish human asset thereof which may be demanded for exertion of creating synthetic replacement for limited natural materials and resources. Overall chemical engineers make very important contributions to make life easy for everyone.

After serving the southern Punjab region for more than two decades through undergraduate program in Chemical Engineering and enjoying continued alumni's and employer's satisfaction, department of Chemical Engineering at the institute commenced postgraduate engineering program in Chemical Engineering in 2016. The program was long awaited and its need was manifested by a large inflow of applicants all over the country. The program aims at producing professionals with postgraduate qualification equipped to work in design, operation, academics and research in Chemical Engineering and allied fields.

Objectives:
Objectives of the MS (Chemical Engineering) program offered at the institute are to:
- amalgamate key science and engineering principles to address the technological challenges of the process industry.
- disseminate advanced engineering concepts and skills in addition to improving students' communication skills to enable them to work in versatile industrial and processional environment

- prepare professionals for rapidly changing technological environments with the core knowledge central to multidisciplinary careers.
- instill strong sense of humanistic values and professionalism in students such that they can conduct ethically and knowledgeably regarding technological impact in societal issues

- enable graduates to assume leader positions in defining the social, intellectual, business and technical dimensions of the professional organizations the belong to

- enable graduates to continue their life-long learning process and participate in graduate education to remain as effective professionals in the work place of the future.

Outcomes:

Graduates with MS (Chemical Engineering) degree from the Institute are desired to possess:

- An ability to apply knowledge of mathematics, science and engineering to design and conduct experiments and to analyze and interpret data to solve engineering problems.
- An ability to design components, systems and processes to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustain-ability.
- The necessary ability to understand the impact of engineering solutions in a global, economic, environmental, societal context with professional and ethical responsibility.
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- Potential to enter in both private and public sectors as chemical engineers and to pursue further education.

Research Facilities:
Coal Research Center
Advanced Separation Lab
Advanced Reaction Engineering's Lab
Simulation Lab

MASTER OF CHEMICAL ENGINEERING CURRICULUM

SEMESTER-1			SEMESTER-2		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
ChE-501 ChE-502	Advance Engineering Mathematics Advance Separation Process Specialization-1	3+0 3+1 2+0	ChE-503 ChE-504	Advance Transport Phenomena Advance Chemical Reaction Engineering Specialization-2	3+0 3+1 2+0
	Total Credits	**09**		**Total Credits**	**09**

SEMESTER-3			SEMESTER-4		
Code	**Course Title**	**Credit Hrs.**	**Code**	**Course Title**	**Credit Hrs.**
	Specialization-3 Specialization-4	2+1 2+1		Research Thesis	06
	Total Credits	**06**		**Total Credits**	**06**

Approved Specialization Couses offered for MS Chemical Engineering

Ch.E-505	Advance Chemical Reaction Design	2+1
Ch.E-506	Numerical methods in chemical engineering	2+1
Ch.E-507	advanced fluid mechanics	2
Ch.E-508	advanced heat transfer	2+1
Ch.E-509	advanced mass transfer	2+1
Ch.E-510	process dynamic & control	2
Ch.E-511	advance particle dynamics	2
Ch.E-512	process design and optimizaion	2
Ch.E-513	project management	2
Ch.E-514	advance environmental engineering	2+1
Ch.E-515	advance biochemical engineering	2
Ch.E-516	advance process modeling & simulation	2+1
Ch.E-517	advace energy engineering	2
Ch.E-518	process safety and loss prevention	2
Ch.E-519	advanced computer aided design	2+1
Ch.E-520	advance d polymer engineering	2
Ch.E-521	research methodology	2
Ch.E-522	coal preparation and benefication	2+1
Ch.E-523	coal gasification	2+1
Ch.E-524	advanced coal power systems	2+1

MS Electrical Engineering Specialization in Power System

CURRICULUM

Introduction

NFC Institute of Engineering and Technology is offering bachelor degree in Electronics and Electrical Engineering since 2001 and has attained excellent feedback from alumni and industry. With this maturity and keeping in view the lack of opportunities for higher degree in Electrical Engineering in southern Punjab, the institute became the second institute in southern Punjab and the only public sector degree awarding institute in Multan to offer MS Electrical Engineering in year 2016. By taking care of the increasing requirement of electrical engineering industry, the institute offers Master of Science (MS) in Electrical Engineering specialization in Power System. A lot of research in areas like renewable energy and efficient utilization of available electrical energy has made this field active worldwide and Pakistan is of no exception.

Objective

The objective of the program is to produce postgraduate professionals with knowledge and skills to find optimal and efficient solutions to real world electrical engineering problems. Graduates are prepared for technically demanding careers in the field of electrical power engineering and for further higher education within the country and abroad. MS Electrical Engineering at the institute is a research based degree motivating students to develop an in-depth knowledge and opportunity to practice real world problems in various related areas such as power system analysis and design, power system protection, analysis and design of renewable energy sources and efficient utilization of electrical engineering systems using modeling and simulation techniques. Students are offered ample choices for selection of postgraduate courses related to their background, interest and area of prospective research.

CORE COURSES

CODE	TITLE
EE-501	Power Generation & Plant Operation
EE-502	Power Transmission & Distribution
EE-503	Renewable Energy
EE-504	Modeling & Simulation

Area Elective Courses

CODE	TITLE
EE 505	Advanced Engineering Mathematics
EE 506	Stochastic Processes
EE 507	Power System Analysis
EE 508	Power System Operation and Control
EE 509	Power Electronics
EE 510	High voltage Engineering
EE 511	Power System Planning
EE 512	DC and Flexible AC Transmission
EE 513	Electric Power Quality
EE 514	Generation of sustainable energy system
EE 515	Power System Protection
EE 516	Power System dynamics
EE 517	Power Engineering project management
EE 518	Power System Reliability
EE 519	Power System Stability and Control
EE 520	Advanced Linear Systems
EE 521	Illumination Engineering
EE 522	Power and Energy Economic Policy
EE 523	Energy and Environment
EE 524	Research Methods
EE 525	Combined Cycle Power and Energy Systems
EE 550	MS Thesis

Note:

1. **Each course has three credit of theory and MS thesis has 6 credit.**
2. **Core courses hours are compulsory and four courses from area elective courses should be taken to fulfill requirement of 24 credit of course work.**
3. **From third semester MS thesis is offered.**

Scheme of Study

For the award of degree, candidates are required to complete 30 credit hours of course work or 24 credit hours of course work along with 6 credit hours for research work/thesis. The candidates are encouraged to submit one paper for National/Inter-national Conference/Journal/Magazine to award 6 credit hours of thesis.

The distribution of 24 credit hours of course work is as under:

	Required Courses	Courses	Sub-Total Credits
Core Courses	To be selected from the core subjects of relevant specialization	4	12
Electives	Area Elective Course (From Open electives or cross area i.e. from all the approved courses other than those included in core and major area Electives; it may be a special subject course)	4	12
	Thesis/02 Elective Courses		06
	Total Credits:		30

MASTER OF ELECTRICAL ENGINEERING SPECIALIZATION IN POWER SYSTEM CURRICULUM

SEMESTER-1			SEMESTER-2		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
EE-	Core Course-I	3+0	EE-	Core Course-III	3+0
EE-	Core Course-II	3+0	EE-	Core Course-IV	3+0
EE-	Elective Course-I	3+0	EE-	Elective Course-II	3+0
	Total Credits	09		Total Credits	09

SEMESTER-3			SEMESTER-4		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
EE-	Elective Course-III	3+0	EE-	Thesis/Two Elective Courses	6+0
EE-	Elective Course-IV	3+0			
	Total Credits	06		Total Credits	06

MS Mechanical Engineering

Mission

The mission of the MS program in Mechanical Engineering is to impart knowledge in the art and science of mechanical engineering through a comprehensive and advanced curriculum that produces specialized mechanical engineers of high ethics and skill, fully prepared for entry into industry, government, graduate school and private enterprise. The program curriculum major discipline of mechanical engineering with introduction to advanced mathematics and use of computers in engineering. The program is expected to enable the students to research, design, develop, test, evaluate and implement engineering solutions to problems that are of a complexity encountered in professional practice.

Objective

The most important purpose of the MS program at NFC Institute of Engineering & Technology is to train engineers for professional practice in the field of major discipline of mechanical engineering. This program is surely going to develop autonomy, impart knowledge as well as the capacity for progressing professional growth. The graduate program of Mechanical engineering will identify, formulate and solve mechanical design engineering problems.

Scope

In today's fast developing technology, growing industrialization and modernization, "Mechanical Engineering" holds a prominent place. Within the wide boundaries of the engineering profession, there are thousands of challenging activities in areas such as research, development, design, manufacture and operation of products and services. Students can tailor courses to suit them with specialist modules that allow them a deeper understanding of particular areas of engineering that interest them. The wide spectrum of courses enables student creativity not only results in a more exciting and engaging learning experience, it also prepares students fully for the practical demands of the post-graduate studies and workplace.
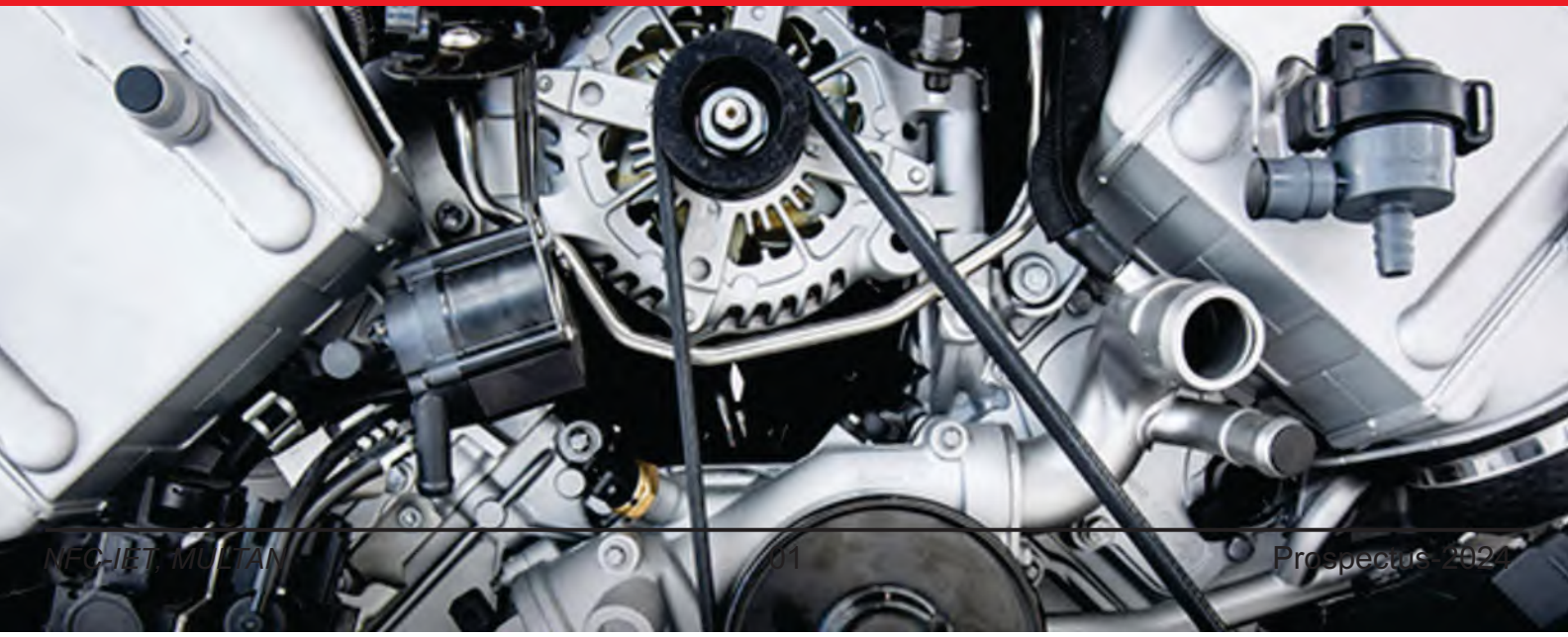
MASTER OF MECHANICAL ENGINEERING CURRICULUM

SEMESTER-1			SEMESTER-2		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
ME-	Core Course-I	3+0	ME-	Core Course-III	3+0
ME-	Core Course-II	3+0	ME-	Core Course-IV	3+0
ME-	Elective Course-I	3+0	ME-	Elective Course-II	3+0
	Total Credits	09		Total Credits	09

SEMESTER-3			SEMESTER-4		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
ME-	Elective Course-III	3+0	ME-	Thesis/Two Elective Courses	6+0
ME-	Elective Course-IV	3+0			
	Total Credits	06		Total Credits	06

List of Core Courses

Sr. #	Course Code	Course Title	Credit Hours
1.	MTH-601	Advanced Numerical Analysis	3 (3+0)
2.	ME-602	Advanced Manufacturing Process	3 (3+0)
3.	ME-603	Advanced Heat Transfer	3 (3+0)
4.	ME-604	Advanced Stress Analysis	3 (3+0)
5.	ME-699	Thesis	6 (0+6)

List of Elective Courses

Sr. #	Course Code	Course Title	Credit Hours
1.	ME-611	Computational Fluid Dynamics	3 (3+0)
2.	ME-612	Advanced Fluid Mechanics	3 (3+0)
3.	ME-613	Advanced Thermodynamics	3 (3+0)
4.	ME-614	Advanced Turbomachinery	3 (3+0)
5.	ME-615	System Dynamics and Control	3 (3+0)
6.	ME-616	Continuum Mechanics	3 (3+0)
7.	ME-617	Fracture Mechanics	3 (3+0)
8.	ME-618	Advanced Solid Mechanics	3 (3+0)
9.	ME-619	Design Optimization & Analysis Techniques	3 (3+0)
10.	ME-620	Combustion and Environment	3 (3+0)
11.	ME-621	Renewable Energy Systems	3 (3+0)
12.	ME-622	Project Management	3 (3+0)
13.	ME-623	Research Methodology	3 (3+0)

Masters of Business Administration

Introduction:

Considering the growing need of skilled human resources in the field of business management at local and national level NFC- Institute of Engineering and Technology, Multan offers MBA Programme at Department of Business Administration. This Programme will cater the needs of students to develop the comprehensive knowledge in various disciplines of the business such as Entrepreneurship, Marketing, Finance, Research and Human Resource Management. Moreover, this Programme will enable the students to build and maintain balance between the targets of economic success and social & environmental responsibility.

With this vision MBA Programme is planned to achieve excellence in local and national marketplace by producing knowledgeable graduates capable to work as future executive in different organizations.

Master in Business Administration (MBA) program is Two Years degree program with a requirement of 60-66 Credit Hours and will spread over four regular semesters. This masters level program is aimed to inculcate managerial and leadership skills and to prepare graduates for both national and multinational organizations.

Program Objectives:

This program is aimed to attain the following objectives & goals:

1. The students will be able to take strategic, comprehensive, and innovative approaches in making business decisions to create value in over changing and challenging environment.
2. The students will be able to integrate their business knowledge and research capabilities to solve complex, ambiguous and unfamiliar problems.
3. The students will be able to actively work as team members and effectively communicate managerial concept clearly and concisely within and outside the organizations.
4. The students will be able to recognize ethical issues and to propose solutions.
5. The students will be able to use analytical frameworks to evaluate the factors impacting the local, global and international businesses in light of ethical reasoning.
6. The students, having a degree with research, will be capable to actively contribute towards quality research/publications.

Eligibility Criteria:

For admission in MBA program:

a. The candidate is required to have at least 2.5/4.0 CGPA OR 60% marks in Annual System.
b. The candidate must have 16 years of undergraduate education OR equivalent degree from HEC recognized institution.
c. The candidate will appear in departmental entry test or GAT General for admission in MBA program. The passing marks of test is 50 percent.

Internship:

The student will be required to undergo 6-8 weeks non-credit internship in any national or multinational organization.

Research Policy:

Students are encouraged to take thesis (optional) of 6 credit hours in lieu of Two Elective courses. However, those students who are willing to opt course work can take two elective courses in place of thesis.

MASTER OF BUSINESS ADMINISTRATION CURRICULUM

SEMESTER-1			SEMESTER-2		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
MB-501	Financial Accounting	3	MB-507	Management Accounting	3
MB-502	Business Math and Statistics	3	MB-508	Pakistan Economy	3
MB-503	Principles of Management	3	MB-509	Organizational Behavior	3
MB-504	Principles of Marketing	3	MB-510	Strategic Marketing	3
MB-505	Business Economics	3	MB-511	Finance Management	3
MB-506	Business Communication	3	MB-512	Production & Operation Management	3
	Total Credits	**18**		**Total Credits**	**18**

SEMESTER-3			SEMESTER-4		
Code	Course Title	Credit Hrs.	Code	Course Title	Credit Hrs.
MB-513	Advanced Research Method	3	MB-514	Strategic Finance	3
	Elective-1	3		Elective-5	3
	Elective-2	3		Elective-6	3
	Elective-3	3		Thesis/Two Elective Courses	6
	Elective-4	3			
	Total Credits	**15**		**Total Credits**	**15**

Total Credit Hours of Degree is 66

Finance Specialization Elective Courses		
Code	Course Title	Credit Hrs.
FN-601	Islamic Banking and Finance	3
FN-602	Investment Analysis and Portfolio Management	3
FN-603	Financial Reporting and Analysis	3
FN-604	Corporate Finance	3
FN-605	International Finance	3
FN-606	Financial Risk Management	3
FN-607	Financial Institutions and Markets	3
FN-608	Analysis of Financial Statement	3
FN-609	Cases in Corporate Governance	3
FN-610	Islamic Investment Principles	3
FN-611	Auditing	3
FN-612	Money and Banking	3

Human Resource Management Specialization		
Code	Course Title	Credit Hrs.
HRM-625	Training and Development	3
HRM-626	Performance Management	3
HRM-627	Recruitment and Selection	3
HRM-628	Compensation and Benefits	3
HRM-629	Knowledge Management	3
HRM-630	Industrial Relations	3
HRM-631	Conflict and Negotiation Management	3
HRM-632	Seminar in HRM	3
HRM-633	Human Resource Development	3
HRM-634	Change Management	3
HRM-635	Cross Cultural HRM	3
HRM-636	Organizational Management	3

Marketing Specialization Elective Courses		
Code	Course Title	Credit Hrs.
MK-613	Service Marketing	3
MK-614	Retail Management	3
MK-615	Sales Management	3
MK-616	Integrated Marketing Communication	3
MK-617	Marketing Research	3
MK-618	Seminar in Marketing	3
MK-619	Distribution Management	3
MK-620	Industrial Marketing	3
MK-621	Brand Management	3
MK-622	International Marketing	3
MK-623	Seminar in Marketing	3
MK624	Distribution Management	3

Business Elective Courses shall be offered as per availability of faculty.

MS Computer Science

Introduction:
Department of Computer Science at NFC-Institute of Engineering & Technology is dedicated to train and produce graduates possessing comprehensive knowledge in various areas of the field. With this vision, the undergraduate program in computer science was launched in 2008 and has achieved excellent acceptance of graduates in the local and international markets. We have been on the move for the last many years. To further enhance the knowledge and skills of students and to fill the gap of higher education in the field in the Southern Punjab region, the Department of Computer Science at the institute commenced the MS program in Computer Science in 2017. This degree program is aimed to improve theoretical and in-depth knowledge, enabling students to add productive research contributions in the emerging area of computer science. The expected outcome is well-rounded computer scientists ready to fulfill the demand for the industry, research, and academics in the country and abroad.

Program Objectives:
Objectives of the postgraduate program are to:
- enlighten students with advanced theoretical and practical computer science knowledge
- impart research skills in students
- enable students to add useful research contributions in the field of Software Engineering, Bioinformatics, Telecommunication, Data Science, Cloud Computing, Scientific Visualization, and computer vision.
- fill the requirement of trained computer science professionals in the relevant industry within the country & abroad
- produce professionals with knowledge of emerging subfields like bioinformatics (a newer field with a lot of room for research directly related to serving humanity), computer vision and computer networks, etc.

Scope:
Information Technology (IT) field has the potential to play a major role in boosting Pakistan's economy as practiced by other Asian countries.

Computer science graduates start their professional careers just after the completion of their bachelor's degrees. However, after serving 2-3 years in the industry, most of them want a higher degree to take their career to the next higher level. In order to enter in the field of academia, MS, and Ph.D. in the relevant field are required. A limited number of universities in Pakistan offer accredited postgraduate degrees in computer science which is far less than the demand. The institute aims to fill this gap by commencing MS (Computer Science) program in 2017.

This program is ideally designed for students who want to broaden and enhance their knowledge in the field of computer science. Today, with the rapidly increasing market demand, students are found interested in the field of computer science and the requirement is well satisfied by the MS (CS) program offered by the institute. The program aims to dispense necessary and important skills to the students, useful for constructing reliable and advanced software systems.

MS (CS) graduates are very well accepted in the field of computer science both within the country & abroad.

Career Options:
There are many career options available for MS (CS). The degree is specifically designed to sharpen student's skills according to market requirements and to prepare them for a competitive future. Research is considered to be the most important and advanced career option in the field of CS. Moreover, numerous job opportunities available for the students who complete their degree within the time & with honor. Some employment opportunities are as follows:

- Computer and Information Researchers
- Computer and Information Scientists
- Computer Programmers
- Computer Engineers
- Computer Supports Specialist
- Computer Analysts
- Database Administrator
- Computer System Administrators
- Data Communication Analysts

Eligibility:

- 16-year of education, i.e., BS in Computer Science/ BS in Information Technology/ Bachelor of Computer Science (Hons)/ Master of Computer Science/ Master of Information Technology/ M.Sc. (Computer Science) from a recognized institution. However, candidates having Computer Engineering/ Bachelor of Science in Software Engineering/ Bachelor of Engineering in Information Technology/ Bachelor of Engineering (Computer & Information System)/B.Sc. Computer System Engineering (16-year education) from a recognized institution are also eligible but have to qualify a deficiency course(s).
- Candidate must have at least CGPA 2.50 out of 4 or first division
- The candidate is required to pass the entry test conducted by the institute/GAT (with minimum 50% marks).

MS COMPUTER SCIENCE CURRICULUM

SEMESTER-1				SEMESTER-2			
Code	Category	Course Title	Credit Hrs.	Code	Category	Course Title	Credit Hrs.
CS-5XX	CS Core	Core Course-I	3	CS-5XX	CS Core	Core Course-IV	3
CS-5XX	CS Core	Core Course-II	3	CS-5XX	CS Elective	Elective-I	3
CS-5XX	CS Core	Core Course-III	3	CS-503	CS Elective	Research Methodology	3
	Total Credits		09		Total Credits		09

SEMESTER-3				SEMESTER-4			
Code	Category	Course Title	Credit Hrs.	Code	Category	Course Title	Credit Hrs.
CS-5XX	CS Elective	Elective-II	3	CS-601	Thesis	Thesis-II	6
CS-5XX	CS Elective	Elective-III	3				
	Total Credits		06		Total Credits		06

Core Courses for MS Computer Science
At least four courses must be taken from the following:

Code	Course Title	Code	Course Title
CS-501	Theory of Automata-II	CS-532	Advanced Operating Systems
CS-502	Advanced Analysis of Algorithms	CS-534	Theory of Programming Languages
CS-531	Advanced Computer Architecture		

Credit Hours Distribution

Category or Area	Credit Hours
CS Core	12
CS Electives	12
Thesis	6
Total Credit Hours	30

List of Elective Course

Computer Graphics and Image Processing

Sr. No.	Course Code	Title	Credit Hrs.
1	CS-504	Advanced Computer Graphics	3
2	CS-505	Visualization in Medicine	3
3	CS-506	Advanced Image Processing	3
4	CS-507	Computer Vision	3

Software Engineering

Sr. No.	Course Code	Title	Credit Hrs.
1	CS-508	Advanced Software Engineering	3
2	CS-509	Software Quality Assurance	3
3	CS-510	Requirements Engineering	3
4	CS-511	Software Project Management	3

Database

Sr. No.	Course Code	Title	Credit Hrs.
1	CS-512	Advanced Database Systems	3
2	CS-513	Advanced Data Mining	3
3	CS-514	Data Warehousing	3
4	CS-515	Distributed Database	3
5	CS-516	Multimedia Databases	3

Bioinformatics

Sr. No.	Course Code	Title	Credit Hrs.
1	CS-517	Advanced Bioinformatics	3
2	CS-518	Computational Genomics	3
3	CS-519	Computational Proteomics	3
4	CS-520	Computational Drug Design	3

Computer Networks

Sr. No.	Course Code	Title	Credit Hrs.
1	CS-521	Advanced Computer Networks	3
2	CS-522	Network Security	3
3	CS-523	Network Performance Evaluation	3
4	CS-541	Securing the Internet of Things	3

Artificial Intelligence & Intelligent System

Sr. No.	Course Code	Title	Credit Hrs.
1	CS-524	Artificial Intelligence	3
2	CS-525	Artificial Neural Networks	3
3	CS-526	Robotics	3
4	CS-527	Machine Learning	3

System Engineering

Sr. No.	Course Code	Title	Credit Hrs.
1	CS-528	Digital Signal Processing	3
2	CS-529	Control Systems and Robotics	3
3	CS-530	Parallel and Distributed System	3
4	CS-533	Real Time Operating Systems	3

Programming Languages

Sr. No.	Course Code	Title	Credit Hrs.
1	CS-535	Advanced Compiler Design-I	3
2	CS-536	Advanced Compiler Design-II	3

Data Science

Sr. No.	Course Code	Title	Credit Hrs.
1	CS-537	Tools and Techniques in Data Science	2+1
2	CS-538	Big Data Analytics	3
3	CS-539	Distributed Data Processing	3
4	CS-540	Natural Language Processing	3

MS Civil Engineering

Mission

Our mission is to educate, inspire and mentor the young graduate students within the civil engineering domain by providing a progressive research-based education and environment to prepare them to meet the challenges of the 21st century in a sustainable global economy. The program will positively impact and improve the civil engineering profession and society by providing highly qualified and skilled professionals who possess depth in their chosen focus area and are able to develop innovative solutions by using relevant engineering approaches and practice.

Objective

The primary objective of the MS program is to identify, assess, and impart essential knowledge, tools, and skills necessary to enhance the professional qualifications in a particular domain and to develop the leadership and entrepreneurship skills of civil engineers. For this purpose, the program will offer high quality postgraduate civil engineering education and maintain its curriculum, which is consistent with the present and future needs of the civil engineering profession serving in a complex technological society.

Scope

The profession of "Civil Engineering" deals with the design, construction, and maintenance of physical structures, including roads, bridges, buildings, dams, railways, and airports. Within the multiple disciplines of the civil engineering profession, there are still open challenges which seek attention of civil engineers for the most innovative and sustainable solutions for the complex technical problems of our society. The program is tailored to provide students with multi-disciplinary courses in their particular areas of interest and research. The wide spectrum of courses provides students an opportunity to learn and excel their knowledge in their chosen focus area as well as to commence applied research and entrepreneurship for the socio-economic betterment of the society, especially the south-Punjab region, in the form of innovative, affordable and sustainable materials, products, ideas and solutions. The program is designed to prepare graduates for professional practice or further study in the field of expertise. NFC-IET is offering MS degree program with subjects related to following domains: Structural Engineering, Construction Engineering & Management, Geotechnical Engineering, Transportation Engineering, Environmental Engineering and Water Resource & Irrigation Engineering.

Link With Sustainable Development Goals (SDGs)

Civil engineering plays a significant role in achieving several Sustainable Development Goals (SDGs) outlined by the United Nations. Here are some key links between civil engineering and the SDGs:

SDG 9: Industry, Innovation, and Infrastructure: Civil engineering is directly linked to this goal as it involves the planning, design, construction, and maintenance of infrastructure such as buildings, roads, bridges, water supply systems, and transportation networks. Developing sustainable and resilient infrastructure is essential for economic growth, innovation, and improving quality of life.

SDG 11: Sustainable Cities and Communities: Civil engineers contribute to the development of sustainable urban infrastructure, including transportation systems, green buildings, and resilient city planning. They focus on creating inclusive, safe, and resilient cities that provide access to basic services, efficient transportation, and sustainable housing.

SDG 6: Clean Water and Sanitation: Civil engineers play a crucial role in designing and implementing water supply and sanitation systems. They contribute to the development of sustainable water management practices, wastewater treatment facilities, and infrastructure to ensure access to safe drinking water and improved sanitation for all.

SDG 7: Affordable and Clean Energy: Civil engineering is involved in the design and construction of renewable energy infrastructure such as solar and wind power systems, hydroelectric plants, and geothermal energy systems. Civil engineers work towards developing energy-efficient buildings, transportation systems, and smart grid networks to promote clean and affordable energy sources.

SDG 13: Climate Action: Civil engineering plays a vital role in addressing climate change by developing infrastructure and technologies that reduce greenhouse gas emissions, enhance energy efficiency, and promote sustainable practices. Civil engineers contribute to climate adaptation strategies, such as coastal protection, flood management, and sustainable drainage systems.

SDG 15: Life on Land: Civil engineering helps in the conservation and sustainable management of natural resources, including land and forests. Civil engineers contribute to projects related to land reclamation, soil stabilization, and sustainable land development practices, aiming to minimize environmental degradation and protect biodiversity.

SDG 17: Partnerships for the Goals: Achieving the SDGs requires collaboration and partnerships between various stakeholders. Civil engineers often work in multidisciplinary teams, collaborating with governments, communities, NGOs, and the private sector to plan, design, and implement infrastructure projects that align with sustainable development objectives.

Civil engineering is an essential field for sustainable development, as it encompasses the design, construction, and management of infrastructure systems that directly impact communities and the environment. By integrating sustainability principles into engineering practices and considering the social, economic, and environmental aspects of projects, civil engineers can contribute significantly to the achievement of the SDGs.

Admission Eligibility

Candidates having passed a degree of B.Sc. Engineering of duration of 8-10 semesters/124-140 Credit Hours courses securing a minimum of CGPA 2.5 on a scale of 4.0 or 60% marks are eligible to get admission in the MS Civil Engineering program. The applicant is also required to pass an entry test as per HEC criteria arranged by the institute on a specified date or GAT(NTS) by or any other examination specified by HEC for admission to the postgraduate program.

Degree Requirements
There are two options (Subject to approval by committee) available for completion of MS degree:
Option 1: Thesis
· 24 Credit Hours course work (8 courses of 3 Cr. Hrs.)
· 06 Credit Hours Thesis
· Total 30 Credits
Option 2: Non-Thesis
· 30 Credit Hours course work (10 courses of 3 Cr. Hrs. each)

MS CIVIL ENGINEERING CURRICULUM

SEMESTER-1			SEMESTER-2		
Code	Course Title	Cr. Hr	Code	Course Title	Cr. Hr
CE-	Elective Course-I	3+0	CE-	Elective Course-II	3+0
CE-	Core Course-I	3+0	CE-	Core Course-III	3+0
CE-	Core Course-II	3+0	CE-	Core Course-IV	3+0
	Total Credits	**9**		**Total Credits**	**9**
SEMESTER-3			**SEMESTER-4**		
Code	Course Title	Cr. Hr	Code	Course Title	Cr. Hr
CE-	Elective Course-III	3+0	CE-	Thesis/Elective Course-VI	3+0
CE-	Elective Course-IV	3+0			
CE-	Thesis/Elective Course-V	3+0			
	Total Credits	**6**		**Total Credits**	**6**

Note:
1. Each course has three credits of theory and MS thesis has 6 credits.
2. Four core courses are compulsory and four courses from electives should be taken to fulfill requirement of 24 credit of course work. (Electives will be offered based on availability of relevant specialization faculty)
3. Four courses and thesis domain will define the specialization/major of degree. In case of course work only, 6 courses will define the specialization/major.
4. From third semester, MS thesis is offered and will be evaluated in 4th semester.

List of Core Courses

CORE COURSES		
Code	Course Title	Cr. Hr
CE-5100	Advanced Structural Materials	3+0
CE-5200	Construction Engineering and Management	3+0
CE-5300	Transportation Planning and Engineering	3+0
CE-5400	Advanced Geotechnical Design	3+0
CE-5500	Design of Hydraulic Structures	3+0
CE-5000	Research Thesis	6+0

*Four core courses are compulsory

List of Specialization/Elective Courses

CODE	Courses	Cr.Hr	CODE	Courses	Cr.Hr
	Structural Engineering			**Transportation Engineering**	
CE 5101	Advanced Structural Analysis	3(3-0)	CE 5301	Traffic Engineering and Management	3(3-0)
CE 5102	Advanced Reinforced Concrete	3(3-0)	CE 5302	Geometric Design and Highway Safety	3(3-0)
CE 5103	Advanced Concrete Technology	3(3-0)	CE 5303	Pavement Analysis and Design	3(3-0)
CE 5104	Design of Masonry Structures	3(3-0)	CE 5304	Airport Planning and Design	3(3-0)
CE 5105	Prestressed Concrete	3(3-0)	CE 5305	Railway Engineering and Design	3(3-0)
CE 5106	Advanced Steel Structures	3(3-0)	CE 5306	Pavement Evaluation and Rehabilitation	3(3-0)
CE 5107	Non-Linear Structural Analysis	3(3-0)	CE 5307	Planning for Traffic Safety and Injury Prevention	3(3-0)
CE 5108	Finite Element Method	3(3-0)	CE 5308	Pavement Management Systems	3(3-0)
CE 5109	Reliability Based Structural Design	3(3-0)	CE 5309	Highway Construction Materials & Equipment	3(3-0)
CE 5110	Advanced Mechanics of Solids	3(3-0)	CE 5310	Harbor and Dock Engineering	3(3-0)
CE 5111	Fiber Reinforced Composites	3(3-0)	CE 5115	Bridge and Tunnel Engineering	3(3-0)
CE 5112	Structural Fire Engineering	3(3-0)	CE 5312	Asphalt Mix Design and Construction	3(3-0)
CE 5113	Structural Optimization	3(3-0)	CE 5313	Airport Management & Safety	3(3-0)
CE 5500	Design of Hydraulic Structures	3(3-0)	CE 5314	Statistics for Transportation Engineering	3(3-0)
CE 5115	Bridge and Tunnel Engineering	3(3-0)	CE 5315	Application of RS & GIS	3(3-0)

CE 5116	Design of Special Structures	3(3-0)	CE 5316	Transportation Infrastructure Asset Management	3(3-0)
CE 5117	Theory of Plates and Shells	3(3-0)	CE 5317	Advance Unmanned Transportation Systems	3(3-0)
CE 5118	Stability of Structures	3(3-0)	CE 5318	Urban Transport System Evaluation	3(3-0)
CE 5119	Structural Dynamics	3(3-0)	CE 5319	Public Transportation system	3(3-0)
CE 5120	Repair, Maintenance and Strengthening of Structures	3(3-0)	CE 5320	Traffic Management Analysis	3(3-0)
CE 5233	Research Methods & Statistics for Civil Engineering	3(3-0)	CE 5233	Research Methods & Statistics for Civil Engineering	3(3-0)
CE 5122	Building Engineering	3(3-0)	CE 5322	Geotechnical Aspects of Highways	3(3-0)
CE 5123	Durability of Concrete Structures	3(3-0)	CE 5323	Traffic Flow Theory	3(3-0)
CE 5124	Design of Tall Structures	3(3-0)	CE 5324	Intelligent Transportation System (ITS)	3(3-0)
CE 5125	Serviceability of Concrete Structures	3(3-0)	CE 5325	Transportation Economics	3(3-0)
CE 5126	Earthquake Engineering and Seismic Design of Structures	3(3-0)	CE 5326	Waterways Transportation	3(3-0)
CE 5127	Sustainable Development and Construction	3(3-0)	CE 5132	Environmental Impact Assessment	3(3-0)
CE 5128	Computational Modeling of Materials and Structures	3(3-0)	CE 5129	Application of 3D Printing in Civil Engineering	3(3-0)
CE 5129	Application of 3D Printing in Civil Engineering	3(3-0)	CE 5329	Transportation Data Management and Analysis	3(3-0)
CE 5130	Fracture Mechanics	3(3-0)	CE 5330	Infrastructure Systems Management	3(3-0)
CE 5227	Occupational Health and Safety in Construction	3(3-0)	CE 5331	Autonomous and Electric Transportation System	3(3-0)
CE 5132	Environmental Impact Assessment	3(3-0)	CE 5332	Data Science for Mobility	3(3-0)
CE 5133	Application of Artificial Intelligence in Civil Engineering	3(3-0)	CE 5127	Sustainable Development and Construction	3(3-0)
CE 5231	Advanced Bidding and Estimation	3(3-0)	CE 5334	Railway Planning and Management	3(3-0)
CE 5232	Construction Failure Analysis	3(3-0)	CE 5232	Construction Failure Analysis	3(3-0)

List of Specialization/Elective Courses

CODE	Courses	Cr.Hr	CODE	Courses	Cr.Hr
Construction Engineering & Management			**Geotechnical Engineering**		
CE 5201	Construction Project Administration	3(3-0)	CE 5401	Advanced Soil Mechanics	3(3-0)
CE 5202	Construction Planning, Scheduling and Control	3(3-0)	CE 5402	Foundation Engineering	3(3-0)
CE 5203	Safety Management in Construction	3(3-0)	CE 5403	Deep Foundations	3(3-0)
CE 5204	Contract Management	3(3-0)	CE 5404	Dam Engineering	3(3-0)
CE 5205	Cost Engineering and Control	3(3-0)	CE 5405	Geotechnical Investigation	3(3-0)
CE 5206	Economic Decision Analysis in Construction	3(3-0)	CE 5406	Soil Improvement Techniques	3(3-0)
CE 5207	Leadership in Construction Management	3(3-0)	CE 5407	Rock Engineering	3(3-0)
CE 5208	Construction Equipment Management	3(3-0)	CE 5408	Environmental Geo-techniques	3(3-0)
CE 5209	Engineering Economics and Value Engineering in Construction	3(3-0)	CE 5409	Soil Dynamics	3(3-0)
CE 5210	Human Resource Management in Construction Industry	3(3-0)	CE 5115	Bridge and Tunnel Engineering	3(3-0)
CE 5211	Supply Chain Management in Construction Industry	3(3-0)	CE 5411	Soil Erosion & Watershed Management	3(3-0)
CE 5212	Decision Making and Risk Management in Construction	3(3-0)	CE 5412	Ground Water Engineering	3(3-0)
CE 5213	Construction Operations and Development of Technologies	3(3-0)	CE 5413	Engineering Properties of Soil	3(3-0)
CE 5214	Entrepreneurship in Construction Industry	3(3-0)	CE 5414	Earth Reinforcement	3(3-0)
CE 5215	Construction Claim Management	3(3-0)	CE 5415	Earth Retaining Structures	3(3-0)
CE 5216	Construction Project Management	3(3-0)	CE 5303	Pavement Analysis and Design	3(3-0)
CE 5217	Public Infrastructure Management	3(3-0)	CE 5417	Soil Structure Interaction	3(3-0)
CE 5218	Planning and Management of Housing	3(3-0)	CE 5418	Slope Stability	3(3-0)

CE 5219	Energy Management in Buildings	3(3-0)	CE 5322	Geotechnical Aspects of Highways	3(3-0)
CE 5127	Sustainable Development and Construction	3(3-0)	CE 5420	Design and Construction of Earthen Dam	3(3-0)
CE 5132	Environmental Impact Assessment	3(3-0)	CE 5421	Rock Mechanics	3(3-0)
CE 5514	Water Resources Economics, Planning & Management	3(3-0)	CE 5422	Geo Environmental Engineering	3(3-0)
CE 5223	Policies, Planning and Strategies for Disaster Management	3(3-0)	CE 5233	Research Methods & Statistics for Civil Engineering	3(3-0)
CE 5224	Hazards and Disaster Management	3(3-0)	CE 5224	Hazards and Disaster Management	3(3-0)
CE 5225	Vulnerability Analysis and Hazard Mitigation	3(3-0)	CE 5425	Principles of Environmental Engineering	3(3-0)
CE 5226	Real Estate Management	3(3-0)	CE 5522	Water Supply and Sewer System Design	3(3-0)
CE 5227	Occupational Health and Safety in Construction	3(3-0)	CE 5427	Municipal Solid Waste Principles and Management	3(3-0)
CE 5228	Total Quality Management (TQM)	3(3-0)	CE 5428	Physico-Chemical Water Treatment Processes	3(3-0)
CE 5229	Project Evaluation and Feasibility Analysis	3(3-0)	CE 5429	Green Engineering Technologies	3(3-0)
CE 5230	Project Management Framework and Tools	3(3-0)	CE 5430	Air Pollution Control Engineering	3(3-0)
CE 5231	Advanced Bidding and Estimation	3(3-0)	CE 5132	Environmental Impact Assessment	3(3-0)
CE 5232	Construction Failure Analysis	3(3-0)	CE 5126	Earthquake Engineering and Seismic Design of Structures	3(3-0)
CE 5233	Research Methods & Statistics for Civil Engineering	3(3-0)	CE 5232	Construction Failure Analysis	3(3-0)
CE 5234	Building Information Modeling for Construction Management	3(3-0)	CE 5127	Sustainable Development and Construction	3(3-0)
CE 5235	Revit for Construction & Contractors	3(3-0)	CE 5534	Membrane Technology for Water and Wastewater Treatment	3(3-0)

CODE	Courses	Cr.Hr
Water Resource & Irrigation Engineering		
CE 5501	Advanced Fluvial Hydraulics	3(3-0)
CE 5502	Hydropower Engineering	3(3-0)
CE 5503	Irrigation Engineering & Practices	3(3-0)
CE 5504	Applied Hydrology	3(3-0)
CE 5505	Sediment Transport	3(3-0)
CE 5506	Advanced Fluid Mechanics	3(3-0)
CE 5507	Drainage Engineering	3(3-0)
CE 5508	Computer Aided Design of Hydraulic Structures	3(3-0)
CE 5509	River Engineering and Flood Management	3(3-0)
CE 5510	Application of RS & GIS	3(3-0)
CE 5511	Soil Erosion & watershed Management	3(3-0)
CE 5512	Hydrological Systems Modeling	3(3-0)
CE 5513	Water Resources Economics, Planning & Management	3(3-0)
CE 5514	Ground Water Engineering	3(3-0)
CE 5515	Advanced Open Channel Hydraulics	3(3-0)
CE 5516	Computational Hydraulics	3(3-0)
CE 5517	Hydrodynamics	3(3-0)
CE 5518	River Flood Modelling	3(3-0)
CE 5519	Urban Flood Management	3(3-0)
CE 5520	Urban Flood Management	3(3-0)
CE 5404	Dam Engineering	3(3-0)
CE 5522	Water Supply and Sewer System Design	3(3-0)
CE 5523	Irrigation System Design and Management	3(3-0)
CE 5524	Data Driven Modelling and Real Time Control of Water Systems	3(3-0)
CE 5132	Environmental Impact Assessment	3(3-0)
CE 5420	Design and Construction of Earthen Dam	3(3-0)
CE 5115	Bridge and Tunnel Engineering	3(3-0)
CE 5528	River Basin Modelling	3(3-0)
CE 5529	Climate Change and Hydrological Cycle	3(3-0)
CE 5530	Water Law and Policy	3(3-0)
CE 5233	Research Methods & Statistics for Civil Engineering	3(3-0)
CE 5232	Construction Failure Analysis	3(3-0)
CE 5127	Sustainable Development and Construction	3(3-0)
CE 5534	Membrane Technology for Water and Wastewater Treatment	3(3-0)
CE 5224	Hazards and Disaster Management	3(3-0)

MS RULES AND REGULATIONS

1 General

· There are two regular semesters (i.e. spring and fall) and one optional summer semester in each academic year.

• Duration of spring and fall semesters is 18 weeks each including midterm and end term examinations.

• Summer semester is nine weeks long including midterm and end term examinations.

1.1 Eligibility for Admissions

Candidates who have passed an undergraduate (16 years or equivalent) degree in the relevant area by securing a minimum 60% marks or a CGPA of 2.5 on a scale of 4.0 are eligible for admission. Other scales are converted accordingly. The applicant is also required to pass an entry test arranged by the institute on a specified date or NTS Graduate Assessment Test (GAT) by securing 50% marks or any other examination specified by HEC/PEC for admission to postgraduate program.

1.2 Age Limit

There is no age limit for admission in post graduate Program.

1.3 Maximum Time Limit

• Duration of MS Program is 2 years (minimum) and 4 years (maximum), where the duration is counted from the date of candidate's registration.

1.4 Application Process

• Applications on prescribed form along with first semester/ quarter dues (bank draft/ page order/ bank chalan) in favor of the treasurer, NFC IET and required documents complete in all respects should be submitted to the convener, admission committee, NFC IET on or before the due date

• The admission of foreign qualified students is made on the assessment made by HEC/ BASR on the basis of candidate's academic records and English proficiency. BASR may also ask the candidate to appear for a test and/ or interview.

• Incomplete applications are not entertained.

1.5 Test and Interview

A written test is conducted by the concerned department on the proposed date followed by the interviews of short listed candidates. For admission, a candidate must qualify both the test and the interview.

1.6 Determination of Merit

Admissions are granted strictly on merit and the following criterion is followed to determine the merit:

BSc (16 years degree)	40%
FSc (or equivalent)	10%
Matriculation	10%
Written Test	30%
Interview	10%

1.7 Pre-Requisite Courses

On identification of a deficiency in the courses an applicant studied at undergraduate level, he/she may be directed by the BASR to pass a certain number of pre-requisite under-graduate courses before taking any post-graduate course.

1.8 Displaying List of Successful Candidates

List of successful candidates is displayed in the concerned department with the approval of the head and the same is forwarded to the Registrar office for the registration of newly admitted candidates. No student is admitted after 15 days of the commencement of first semester.

1.9 Migration

Students migrating from other universities/ institutes are not entertained.

1.10 No Objection Certificate (NOC)

A No Objection Certificate (NOC) is required from the students who have completed their B.Sc. (undergraduate) from other universities/ institutes. In addition, all admitted students are required to submit an affidavit stating that neither he/ she is not enrolled in any graduate program in Pakistan or abroad nor will do so until the completion of the degree.

1.11 Credit Hours Requirements

To earn MS Engineering and MS Computer Science degree, a candidate must complete 30 credits with a mandatory 24 credits course work and a 6 credits thesis.

1.12 Contact Hours

Following table describes how 1 credit is translated into contact hours for theory, practical and thesis:

Credit	Contact hours per week	
	Theory	Practical
1	1	3

2 Teaching and Examination

- 75% attendance is mandatory in each course
- Inability to pass a course on the basis of low attendance is treated as failure in that course and the student has to repeat if it is a core course. Otherwise, he/ she can take an alternate course. This, however, doesn't apply on courses withdrawn within allowed course of time
- A student can register a maximum of 4 courses in a semester

2.1 Course Outline and Syllabi

- Course are offered by the concerned department at the start of each semester along with a description of each course containing the information regarding course code, time, day, credits, nature (core or allied) and teacher etc.
- Course details are provided by the teacher containing objective, contents and the schedule of assignments, quizzes and term paper
- Courses are offered by the department keeping in view the availability of teachers and other academic and administrative aspects
- Outline of courses are revised by BASR from time to time on the recommendation of Board of Studies/ syndicate.

2.2 Examination

Performance of a student is measured through a system of continuous testing spread over the entire period of studies. Besides midterm and end term examinations, there are a number of quizzes, presentations and assignments. Student's performance in all these class activities contributes towards his/ her grade. To register for midterm and end term examinations, a student must fulfill the following conditions:

- The student is enrolled in the department, has paid all the necessary dues and has fulfilled all other conditions laid down from time to time

The student has not been debarred for examination under any other rule or regulation

- The student has applied to the controller of examination on a prescribed proforma through concerned head.

Following fee schedule applies:

*	Before deadline	Normal fee
*	At most six days before midterm	Late fee
*	At most 2 days before midterm	Double fee

- No application is entertained after the time limits mentioned above.

Teacher of the subject conducts both midterm and end term examinations and evaluates each student based on his/ her performance. The grades assigned by the teacher are final and can not be challenged at any forum. The scripts of all examinations, except those of end term, are shown to students for their review and feedback. Finally, the scripts are submitted to the controller of examinations within 15 days of the examination. The award lists, however, are forwarded to the controller of examinations within four weeks of the end term examination. Midterm exam is conducted in 9th week of class work and the end term is after 16th week. Following weight is assigned to midterm, end term and sessionals unless and until the departmental examination committee approves any other scheme:

Midterm Exam	30%
Endterm Exam	50%
Sessional Marks	20%

2.3 Award of Letter Grades

- Concerned teacher assigns letter grades to the comprehensive scores in consultation with the head according to the prescribed guidelines
- Comprehensive award list along with letter grades are displayed in the department. Discrepancies are resolved within 3 days
- Comprehensive award list is sent to the

controller of exams with ten days of the end term examination through the head. A copy of the same is retained by the teacher and the head.

- Teacher and the concerned head are responsible for the correctness of the comprehensive award list sent to the controller of examinations.
- Grade point (GP), Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA) are calculated by the controller of examinations at the end of each semester.
- Letter grade i.e. Grade Point (GP) in a subject is allocated as per the following criterion:

Grade	A+	A	B+	B	B-	C+	C	F	W	WF	I
Grade Point (GP)	4	3.7	3.3	3	2.7	2.3	≤ 2	0	–	–	–

- Grade Point Average (GPA) of a student in semester Sk is calculated as follows:

$$GPA_{S_k} = \frac{\sum_{s \in S_k} GP_s \, x \, CH_s}{\sum_{s \in S_k} CH_s}$$

where s is a subject offered in semester Sk and 1 < k < 4

- Cumulative Grade Point Average (CGPA) of a student at the end of semester Sk is calculated as follows:

$$CGPA_{S_k} = \frac{\sum_{s \in s_1......s_k} GP_s \, x \, CH_s}{\sum_{s \in s_1......s_k} CH_s}$$

where s is a subject offered in semester Sk and 1 < k < 4

- For students less than 20, in numbers, there GPA will be calculated by Ready Reckoner Table by absolute grading.
- A student failing to maintain a GPA of 2.0 at the end of first semester is put on probation.
- A student has the option to repeat a subject in order to improve his/ her CGPA. In that case, the new grade (higher or lower) replaces the previous grades.
- A minimum 2.0 CGPA, with no F grade, is required for the award of degree
- Scripts of both midterm and end term examinations are stored with the controller of examination for two years and then are wasted
- A list of registered students is forwarded to the controller of examination within 15 days of the commencement of each semester
- To pass a course, a student must obtain at least 2.0 GP on a scale of 4
- A departmental exam committee, constituted by the vice chancellor for a period of three year, looks into all matters related to examinations. Decisions taken by the committee are final.

2.4 Duration of Examinations
Duration of examinations for all courses is as follows:

Mid Term	1.5 hours
End Term	2.5 hours

2.5 Home Assignments and Term Papers
Each course carries at least:
- Three home assignments at least one per 5 weeks or One term paper or
- Three quizzes, at least 5 weeks apart

2.6 Evaluation and Time Frame for Theory
- Before end term examination, teacher prepares and displays the interim award list (IAL) according to the depend rules.
- Teacher marks the end term examination scripts and submits comprehensive award list (CAL) to the controller of examinations within stipulated time frame.
- Teacher schedules additional assessment instrument such as assignments, quizzes, presentations, seminars, group discussion, field study and reports etc which carries 20 percent weightage of each subject.

2.7 Evaluation and Time Frame for Practical
- Teacher keeps all his/ her students informed regarding their performance in each class activity
- At the end of each semester and before the end term exam, teacher prepares the displays IAL
- Teacher submits CAL to the controller examinations within stipulated course of time
- For each experiment, jury presentation, design report, project or assignment are considered independent assessment instruments. Relative weight of each these assessment types is determined by the teacher.

2.8 Question Paper
- Questions papers is set by the concerned teacher.
- Teacher is solely responsible for maintaining confidentiality of the question paper.

2.9 Reference Material
Teacher should announce before hand all

the books, handouts and/ or other material that students can refer to during the examination.

2.10 Schedule

Controller examinations announces the schedule of midterm and end term examinations one week before the start of examination. The same is done in consultation with concerned head/ coordinator.

2.11 Conduct of Examination

- Concerned teacher conducts the examination as superintendent.
- Concerned head deputes staff such as deputy superintendent and invigilator.
- Superintendent ensures the following:
- All answer sheets are signed by the superintendent/ deputy superintendent.
- Answer sheets are issued to the invigilator 10 minutes before the start of examination and retrieved at the end of the examination
- A report regarding absent students is forwarded to the concerned head
- Invigilator staff performs the following duties:
- Students taking the examination are identified through their institutional identity cards and roll number slips
- Students are warned against the use of unfair means
- Mobile phones and all other items not allowed during the examination are removed
- No student joins after 30 minutes of commencement of the examination.
- Student found using unfair means or assisting other students can no longer continue. All such cases are taken the departmental examination committee whose decision is final.

2.12 Withdrawing Subjects

- This option is available to the students studying in regular semesters only i.e. Spring and Fall Applications for withdrawal can be launched latest by the fourth week of the commencement of semester
- Withdrawn subjects appear with a letter grade 'W'
- Subjects repeated after withdrawal are awarded grade 'R'
- Throughout the span of the degree, a student can withdraw a maximum 6 credits

2.13 Forced Withdrawal

A student ineligible to continue due to low attendance or due to any other legal implication is awarded 'WF' grade. He /she, on successful repetition, are warded 'R' grade.

2.14 Incomplete Grade

- Students are awarded 'I' grade in unfinished subjects
- If a student with 'I' grade does not improve it in one calendar year, the same is automatically converted
- to 'F' grade

2.15 Repeating Subjects

- In case of failure, a students has to earn a passing grade in that subject within stipulated time if it is a core course
- In case of an elective subject, a student may take some other elective subject
- A student failing a core course has to wait until it is offered again
- The department offers courses as per the availability of teachers and other legal implications

2.16 Dropping Students

A student is dropped if he/ she:
- fails to register two courses in first semester
- fails to register for two consecutive semesters All such cases are taken to BASR whose decision is final.

2.17 Deferring Studies

- A fresh student taking admission in first semester can't apply for deferment
- Deferment doesn't affect maximum allowed time for the completion of degree
- Student seeking deferment needs to apply at least 5 days prior to the final examination. Controller of examination notifies deferment in consultation with concerned head.

2.18 Registering Subjects and Payment of Fee

- A student can register only those subjects offered by the department
- Registration roll in each subject is finalized and dispatched to the controller of examination within fifteen days of the commencement of each semester
- Students need to pay dues twice a year until the completion of degree. These are in addition to the dues of summer semesters (if applicable).
- Deferment seeking students have to pay full dues for the period of deferment

A student carrying outstanding dues for a period of six months are automatically dropped. He/ she can, however, apply to the vice chancellor to be reinstated after paying all outstanding dues. Decision taken by the vice chancellor in all such cases is final.

2.19 Re-admission Policy

- Dropped students can apply for re-admission but the maximum degree completion period is counted from the date of registration
- A student once dismissed due to disciplinary violation is never red-admitted

2.20 Special Provisions

- For situations not addressed by the set rules and regulations, decision of BASR is final
- Interpretation of set rules and regulations done by the authorized officers/ committees is final
- The institute reserves the right to change rules, regulations, fee structure and contents of courses without any prior notice
- No student is allowed to be simultaneously enrolled in any university within the country or abroad except exchange students
- Ignorance of set rules and regulations doesn't absolve students of their responsibilities and is never treated as an excuse

3 Thesis/ Dissertation

- In addition to the regular course wok, a student needs to submit a dissertation/ thesis. Each candidate is assigned a supervisor for his/ her research work. The supervisor must hold a PhD degree in respective discipline. However, an MS qualified teacher can act as a co-supervisor, if required.
- Title of research and name of supervisor is approved by BASR on the recommendation of concerned head
- A student can take thesis after passing four courses. However, he/ she can apply for thesis evaluation only after completing his/ her course work.
- A student needs to submit 4 hard copies of his/ her thesis for evaluation. A copy of the thesis after evaluation is returned to the student
- If a candidate is recommended to revise his/ her thesis, he/ she must submit the revised thesis for re-evaluation within six months

3.1 Thesis Evaluation

-
- Thesis report being submitted for evaluation must contain plagiarism report as per HEC criteria.
- Thesis report is evaluated by both internal and external examiners. Supervisors' acts as internal examiners and the external examiners are appointed by the Vice-Chancellor on the recommendation of BASR.
- List of external examiners is approved by the Vice Chancellor from the list of proposed examiners submitted by the BOS of the concerned department.
- Final external examiner is picked by head of department in consultation with program coordinator from approved list of external examiners.
- Final report on thesis and viva voce examination is submitted by the examiners on a prescribed proforma.
- In case of difference of opinion, a third examiner is appointed by the vice chancellor on the recommendation of BASR.
- Thesis are evaluated strictly in accordance with the set rules and regulations.

3.2 Changing Supervisor

Due to valid reasons and after having written consent of present supervisor, a student may change his/ her supervisor with the approval of Board of Studies (BoS) of the department. After that, he/ she has to get himself/ herself registered a fresh with new research proposal/ synopsis prepared in consultation with the new supervisor. However, the candidate can continue his/her previous work in consultation with the new and\old supervisors.

4 Awarding Degree

A student is awarded MS Engineering degree if he/she has:

- CGPA 2.0 on a scale of 4
- No 'F' grade in any subject
- Completed the credit hours requirements
- Completed thesis as per requirements
- At least one research paper submitted to an HEC recognized journal Students eligible for the award of degree are required to submit a degree requirements completion form to their concerned head for onward submission on to the controller of examinations.

Glossary of Terms

- Academic Year' means the span containing consecutive fall, summer (optional) and spring semesters
- BASR' means Board of Advanced Studies and Research
- BoS' means Board of Studies CAL' means Comprehensive Award List Competent Authority' means the vice chancellor of the institute
- Controller of Examinations' means the controller of examinations of the institute
- External Examiner' means a person holding higher qualification in the relevant discipline and is appointed by the competent authority for an examination. Neither a teacher of the institute nor any visiting teacher teaching at the institute can act as external examiner
- Faculty' means the concerned faculty of the institute HEC' means Higher Education Commission of Pakistan

Head' means then head of the concerned department
- IAL' means Interim Award List
- Institute' means NFC Institute of Engineering and Technology, Multan, Pakistan

- Internal Examiner' means a teacher appointed by BASR to teach a subject
- Neutral Examiner' means a person holding higher qualification in the relevant discipline and has not taught the subject for which he/ she is being appointed as a neutral examiner in that very semester. He/ she is generally chosen from the faculty of the concerned departmentNFC IET' means National Fertilizer Corporation, Institute of Engineering and Technology, Multan, Pakistan
- PEC' means Pakistan Engineering Council
- Pro Vice Chancellor' means the pro vice chancellor of the institute
- Student' means a bonafide postgraduate student enrolled in concerned department Subject' means prescribed course of study
- Treasure' means the treasurer of the institute Vice Chancellor' means the vice chancellor of the institute

Certificate Distribution of Orientation classes

Faculty & Participants of Orientation classes

DETAIL FEE FOR MS PROGRAMS
(CHEMICAL ENGINEERING, ELECTRICAL ENGINEERING, MECHANICAL ENGINEERING, CIVIL ENGINEERING & COMPUTER SCIENCE) FOR ADMISSION OF SESSION 2024

Description	At the time of Admission	After Admission				Total
	1st Semester	1st Semester	2nd Semester	3rd Semester	4th Semester	
Admission	15,000.00	–				**15,000.00**
Processing Fee	2,000.00	–				**2,000.00**
Registration Fee	1,500.00	–				**1,500.00**
Caution Money	5,000.00	–				**5,000.00**
Library Security	5,000.00	–				**5,000.00**
Tuition Fee	45,000.00	–	45,000.00	30,000.00	30,000.00	**150,000.00**
Utilities	4,500.00	–	–	4,500.00	–	**9,000.00**
Internet Charges	1,500.00	–	–	1,500.00	–	**3,000.00**
Students Societies FEE	1,000.00	–	–	1,000.00	–	**2,000.00**
Students Function	1,500.00	–	–	–	–	**1,500.00**
Alumni Contribution	500.00	–	–	–	–	**500.00**
Sports Fee	500.00	–	–	500.00	–	**1,000.00**
Magazine Fee	250.00	–	–	250.00	–	**500.00**
Total	**83,250.00**	**–**	**45,000.00**	**37,750.00**	**30,000.00**	**196,000.00**
Examination Fee	–	3,000.00	3,000.00	3,000.00	–	**9,000.00**
Thesis Evaluation Fee	–		–	–	10,000.00	**10,000.00**
Grand Total						**215,000.00**

DETAIL FEE FOR MBA PROGRAM FOR ADMISSION OF SESSION 2024

Description	At the time of Admission	After Admission				Total
	1st Semester	1st Semester	2nd Semester	3rd Semester	4th Semester	
Admission	15,000.00	–				**15,000.00**
Processing Fee	2,000.00	–				**2,000.00**
Registration Fee	1,500.00	–				**1,500.00**
Caution Money	5,000.00	–				**5,000.00**
Library Security	5,000.00	–				**5,000.00**
Tuition Fee	30,000.00	–	30,000.00	30,000.00	30,000.00	**120,000.00**
Utilities	4,500.00	–	–	4,500.00	–	**9,000.00**
Internet Charges	1,500.00	–	–	1,500.00	–	**3,000.00**
Students Societies FEE	1,000.00	–	–	1,000.00	–	**2,000.00**
Students Function	1,500.00	–	–	–	–	**1,500.00**
Alumni Contribution	500.00	–	–	–	–	**500.00**
Sports Fee	500.00	–	–	500.00	–	**1,000.00**
Magazine Fee	250.00	–	–	250.00	–	**500.00**
Total	**68,250.00**	**–**	**30,000.00**	**37,750.00**	**30,000.00**	**166,000.00**
Examination Fee	–	3,000.00	3,000.00	3,000.00	–	**9,000.00**
Thesis Evaluation Fee	–		–	–	10,000.00	**10,000.00**
Grand Total						**185,000.00**

Note:

From 5th Semester and onward Rs.10,000/- per semester will be charged as Semester Registration Fee.

Students opting course work instead of thesis in sixth semester pay additional fee for these courses.

Admission Schedule for MS Program

(a)	Last date for Receipt of Application Form with dues	03.09.2024
(b)	Entry Test	12.09.2024
©	Interview	24.09.2024 to 25.09.2024
(d)	Display of Merit List	08.10.2024
(e)	Commencement of Class Work	18.10.2024

Hostel Charges for MS Students

Hostel Fee for one year allotment will be 22,250/- PKR as mentioned below:

(a)	Room Rent (per resident per year)	Rs.	14,400
(b)	Electricity charges (per resident per year)	Rs.	4,800
(C)	Housekeeping Charges (per resident per year)	Rs.	1,700
(d)	Maintenance/Breakage	Rs.	250
(e)	Security	Rs.	700
(f)	Hostel Resident Card	Rs.	100
(g)	Generator Fuel Charges	Rs.	300
	Total:	**Rs.**	**22,250**

CHECK LIST OF
Documents to be attached with the Application Form

1. Attested photocopy of Matric/Equivalent Certificate ☐
2. Attested photocopy of F.Sc./Equivalent Certificate. ☐
3. Attested photocopy of B.Sc./Equivalent Certificate. ☐
4. Recent Passport Size Photograph (3 Nos.) with your name and Form No. on the back of photo. ☐
5. Medical Certificate from a Registered Medical Practitioner declaring the Candidate Fit (physically & mentally) for the course. ☐
6. Attested photocopy of Hafiz-e-Quran Certificate ☐
7. **NOC from employer/organization in case of any employment.** ☐
8. Attested copy of Entry Test Result ☐
9. Attested copy of PEC Registration (applicable only for Engineer) ☐
10. Attested copy of GAT(General)/(Subject) ☐
11. Original Migration Certificate
12. Undertaking on Stamp Paper of worth Rs.50/- ☐
13. Two Academic Reference Letters ☐

IET PICTORIAL

IET PICTORIAL