PROSPECTUS
2022-23

HITEC University

In Truth I Triumph

CONTENTS

Founding Chairman,
HIT Education Welfare Trust

Lt Gen Israr Ahmad Ghumman (Retd), HI, HI(M)

Vision

HITEC University shall be a premier institution and bastion of academic excellence. It must become a citadel of our ideological moorings, national integration and socio- religious values. HITEC ought to trigger the human mind to think clearly perceiving the environment and issues confronting human beings, seeking intelligent, viable and practical solutions, leading to societal development and the overall betterment of human race. The campus shall provide our progeny the environment for intellectual flourishment, nurturing fertility of thought and creativity. HITEC University faculty will focus on preparing our youth to face the challenges of life with honor, confidence and fortitude through character building and grooming. In HITEC University merit, justice, honesty and adherence to moral and social values must prevail. The University shall provide a pedestal for fulfillment of our youth's aspirations and hopes to live an honorable life as citizens of Pakistan.

Mission

HITEC University will be a center of excellence in teaching, learning and research. We instill and inspire intellectual curiosity, lifelong quest for knowledge and a keen urge for social and moral responsibility. The University will establish strong linkages with industry, ensuring innovative research leading to economic prosperity of Pakistan.

Board of Governors

Members

Lieutenant General Syed Aamer Raza, HI (M)
Chairman Heavy Industries Taxila Education Welfare Trust

Lieutenant General Israr Ahmad Ghumman, HI, HI (M) (Retd)
Former Chairman HIT Taxila

Dr Nabeel Hayat Malik, HI, SI
Advisor SPD, Safety Board, Islamabad

Engr. Jawed Salim Qureshi
Ex-Chairman, Pakistan Engineering Council, Islamabad

Prog. Dr. Anila Kamal Vice Chancellor, Women University, Rawalpindi

Engr. Wahaj us Siraj
CEO Nayatel Pvt Ltd, Islamabad

Brigadier Attique Ahmed
Director Technical Heavy Industries Taxila

Brigadier Muhammad Saleem
Managing Director HRF (M), Heavy Industries Taxila

Brigadier Muhammad Umair
Director Administration , Heavy Industries Taxila

Brigadier Imran Ahmad Malik SI (M) (Retd)
Director HITEWT

Chairman Higher Education Commission, Islamabad

Mr. Ammar Saddique Khan
Member Provincial Assembly of the Punjab

Mr. Jahangir Khanzada
Member Provincial Assembly of the Punjab

Mrs. Sabrina Javaid
Member Provincial Assembly of the Punjab

Secretary Higher Education Department, Punjab

Nominee of Punjab Higher Education Commission

Vice Chancellor, HITEC University, Taxila

Chairman Board of Governors
Lieutenant General Syed Aamer Raza, HI(M)

Message

It gives me immense pleasure that as a premier university of Pakistan, HITEC University has been consistently making incremental progress and has successfully diversified and ventured into offering new programs in line with the industry requirement. University has achieved the status of a highly reputed seat of learning and research among its contemporary institutions within a short span of time. These are the result of sustained efforts the university has made over the years towards faculty development, research and creativity.

University has successfully adopted new trends in education and setting quality standards by following educational parameters given by the Higher Education Commission, Pakistan Engineering Council, and National Computing Education Accreditation Council. With its state-of-the-art purpose built campus, high quality faculty, progressive curriculum and close linkage with the industry, the University provides best learning environment for students and researchers.

The University has strong linkages with national and international academic institutions and offers a perfect opportunity for students to study in internationally reputed universities through student exchange programs. HITEC University's international collaborations with top ranking universities of UK, Turkey, and Malaysia also provide ample opportunities to its students to broaden their learning experiences by completing part of their education in these universities at low cost.

With more than three thousand graduates, a dynamic and didactic orientation, the path ahead looks even more promising and presents a perfect opportunity to the prospective students to invest in their future by becoming a part of HITEC University.

The Board of Governors and the management of the University remain fully committed to provide quality education to the students and their moral grooming to make them proud and responsible citizens of Pakistan.

May Allah SWT grant success to HITEC University in all its endeavours. Ameen

Acting Vice Chancellor
Prof. Dr. S Kamran Afaq

Message

I extend a very warm welcome to the prospective students at HITEC University, an esteemed higher education institution with history of academic excellence commitment. HITEC University is providing high quality education and has been striving hard to ensure conducive learning and teaching environment where scholars acquire knowledge, develop advanced skills and gain the capability to innovate solutions for the industry. Our dedicated and experienced faculty and state-of-the-art labs distinguish us from our contemporaries.

Our undergraduate degree programs of Electrical, Mechanical, Computer and Civil engineering are approved/accredited by Pakistan Engineering Council (PEC) based on Outcome Based Education (OBE) system under Washington Accord (WA). Our engineers with OBE degrees are at par with the engineers of WA signatories and are, therefore, being employed in USA, Australia, Canada, New Zealand, Ireland, South Korea, China, Japan, UK and Malaysia. It a testament of the hard work being put in by our qualified faculty that our degrees are unconditionally recognized by advanced countries for employment.

University also offers undergraduate degrees in Computer Science, Software Engineering, Biomedical Engineering, Business Administration, Accounting and Finance, Mathematics, Physics and Islamic studies and postgraduate degrees in variety of disciplines. Our BS Computer Science and Software Engineering Program are also approved/accredited by National Computing Education Accreditation Council (NCEAC).

The recent surge of COVID 19 pandemic has made rapid paradigm shift in the education sector and created opportunities to explore and implement innovative ways of teaching, learning and imparting of training. HITEC University successfully transitioned from on campus teaching to a digital mode of education during the peak of COVID-19 in a matter of few weeks. Higher Education Commission, Pakistan widely acknowledged the efficacious implementation of online teaching model of this University and ranked 3rd among all the higher education institutions (HEIs) / universities in Pakistan.

University has a strong student exchange programs with internationally renowned higher education institutions that provides to partially complete their degree programs at low cost. Regular visits to industries and mandatory internship with industries have helped our students become proficient in skills relevant to local and foreign industry.

My dear potential students, I assure you that your aspirations for learning will be rewarding and you will get high quality education along with opportunities to participate in extra-curricular activities.

May Allah bless you, Aameen.

Why HITEC University?

Heavy Industries Taxila Education City (HITEC) is an addition to the hallmarks of Taxila. Located at the foothills of Margalla, 30 km North West of Islamabad and Rawalpindi, it is an integrated and purpose specific complex, housing educational institutes, catering for pre-school to university level education.

HITEC University was granted its own charter in November, 2009 by the Government of the Punjab. The University is sponsored by Heavy Industries Taxila Education Welfare Trust (HITEWT).

The University has a dynamic, industrious and highly committed full time faculty which keeps abreast with the latest developments in teaching methodologies. In a short span of time, HITEC University has emerged as a modern and vibrant place of learning and can be rightly called a citadel of knowledge. It hosts state-of-the-art facilities and takes pride in offering learning environment having unmatched safety and security of the premises.

The University has spacious, air-conditioned and very well equipped classrooms, laboratories, library, auditorium and excellent allied facilities. A newly constructed hostel is available on first come first serve basis to accommodate over 300 students within the campus. Library provides ample space for books, reading and research activities.

Students get abundant opportunities for internships and employment due to close proximity of the University to Heavy Industries Taxila (HIT), Pakistan Ordinance Factories (POFs), Heavy Mechanical Complex (HMC), Pakistan Aeronautical Complex (PAC) Kamra, Telephone Industries of Pakistan (TIP) and FECTO Cement etc.

The University, besides imparting quality education, assigns equal importance to character building, extra and co-curricular activities. We aim to make our students morally and physically sound individuals and responsible citizens of Pakistan, with a strong urge of service to humanity.

Motto

The motto should guide the students in their future lives as a beacon of light and be a reflection of their character strength and grooming. 'Truth' is the key word in the selection of University's motto, for indeed it has been the virtue of the prophets and the object of pursuit of all great men, scholars, researchers and scientists. Finding and upholding truth is the purpose and spirit of real education. The most befitting inspiration was found in a Quranic verse, "Wa Qaulu Qaulun Saddeeda", (Ayat 70, Al-Ahzab) but to keep the sanctity of the divine words it has been replaced by a Hadith, carrying the same assertion "Assidqo Yunjee", meaning "In truth lies success". Its English equivalent " In Truth I Triumph" is the translation of a Latin slogan "In Veritate Triumpho" ascribed to Myddelton of Gwanynog (1638 AD).

Emblem

HITEC University emblem symbolizes Pakistan's national heritage, ideology, cultural values, and provides conviction and courage to its students. The University emblem is a roundel, in line with traditional Muslim shield. It has two rings; the outer ring contains the name of institution and its motto while the inner ring embodies a multi-layered insignia. On the top is the rising Sun signifying energy, hope and newness. At the bottom is a body of water which is source of all life. In the middle the white emerging lines stand for the earth which is the abode of all mankind. The blue lines show rivers on the Earth indicating that civilizations have grown on the bank of rivers. The pattern formed by white and blue lines alludes to an open book that represents all recorded human knowledge. The book is placed on the surface of the water, pointing to an eternal challenge we are confronted with. In the back drop of the book, emerges the golden Sun sending its rays across the universe. The rising Sun also represents the dawn of a new era where darkness is dispelled and brightness is ushered in.

Why Taxila?

Taxila or Takshashila (city of cut stone) is a historical city, which is just 30 kms north of Islamabad, the capital of Pakistan. It is one of the most important archaeological sites in the country and was included as UNESCO World Heritage List in 1980.

Taxila, the main centre of Gandhara civilization, has been an important Vedic/Hindu and Buddhist center of learning from the 6th century BC to the 5th century CE. During its peak period of glory, Taxila exerted "intellectual suzerainty" over other centres of learning in India, and its primary concern continued to be the higher education in various arts and crafts. This is the region from where Buddhism travelled to the Far East. Persians, Greeks under Alexander the Great and Central Asians invaded this the area and all subsequently left their mark.

Taxila is perhaps best known because of its association with Chanakya, also known as Kautilya, the strategist who guided Chandragupta Maurya and assisted in the founding of the Mauryan empire. The Arthashastra (Sanskrit for The knowledge of Economics) of Chanakya, is said to have been composed in Taxila. The Ayurvedic healer Charaka also studied here. The ancient grammarian Panini, who codified the rules that would define classical Sanskrit, has also been part of the community at Taxila.

In early 20th century, the British archaeologist Sir John Marshall conducted extensive excavations of Taxila. There are over 50 archaeological sites scattered in a radius of 30 kms around the city. Some of the most important sites are; Dhamarajika Stupa and Monastery (300 BC – 200 AD), Bhir Mound (600-200 BC), Sirkap (200 BC – 600 AD), Jandial Temple (c.250 BC) and Jaulian Monastery (200 – 600 AD).

Nicholson's Obelisk, a monument of British colonial era situated at the Grand Trunk road welcomes the travelers coming from Rawalpindi/ Islamabad to Taxila. The monument was built by the British to pay tribute to Brigadier John Nicholson (1822–1857) an officer of the British Army who died in India in 1857.

In addition to the ruins of Gandhara civilization and ancient Buddhist/Hindu culture, relics of Mughal gardens and vestiges of historical Grand Trunk Road, which was built by Emperor Sher Shah Suri in 16th century, also exist in Taxila region.

Modern Taxila is heavily industrialized. Industries like HIT, PMO, HMC, HEC and POFs etc are located in this region.

FACULTY OF ENGINEERING AND TECHNOLOGY

01 Department of Mechanical Engineering

02 Department of Electrical Engineering

03 Department of Civil Engineering

04 Department of Bio-Medical Engineering

05 Department of Computer Engineering

06 Department of Computer Science

Prof. Dr. S Kamran Afaq
Dean

It is my pleasure to welcome you to the HITEC University. Faculty of Engineering and Technology is composed of six departments, namely, Department of Mechanical Engineering, Department of Electrical Engineering, Department of Civil Engineering, Department of Bio-Medical Engineering, Department of Computer Engineering and Department of Computer Science. Our undergraduate programs of Electrical, Mechanical and Computer Engineering are fully accredited by the Pakistan Engineering Council, as per Outcome Based Education (OBE) system. It is a unique honor which implies that our Degrees in these disciplines are unconditionally recognized by advanced countries for employment under Washington Acord. Our BS Computer Science Program is also accredited and is placed in "W" category (the highest) by the National Computing Education Accreditation Council (NCEAC). Our educational programs are a holistic healthy blend of social sciences, engineering, and business practices and, above all, ethical values. Our

spacious and extremely well-equipped Laboratories are enviously viewed by many of our competitors. It is pleasure to announce that this year we are planning to launch Biomedical Engineering and Software engineering programs under Electrical Engineering and Computer Science departments respectively. Besides nurturing future leaders of society, HITEC University is also dedicated to world-class research; we also offer MS/ PhD level education in Electrical, Mechanical and Computer Engineering as well as in Computer Science. We are strictly adhering to the guidelines of Higher Education Commission (HEC) of Pakistan for imparting quality education/research to our students. Highly qualified, professionally competent, research oriented and experienced faculty members have been employed to ensure effective teaching and meaningful R&D as per set standards and objectives of PEC, NCEAC and HEC. Besides keeping abreast with the latest developments in the knowledge of their respective domains, the faculty members actively participate in the R&D activities. It stimulates new ideas and innovative thinking to guide our students in their research and implementation work. The university offers a wide spectrum of co-curricular and extracurricular activities for our students to groom into balanced personalities. We also involve our students to actively participate in "Social Service" related activities, so as to make them conscious of social responsibilities towards the society. In brief, the HITEC University is endowed with all those assets, resources and facilities which are the hallmarks of a top class Institution in Pakistan. So, if you aspire to be a competent Electrical, Mechanical, Civil, Computer Engineer or a skilled Computer Scientist, we are here to groom and equip you with requisite knowledge, skills and the attitude for your acceptance in the national and international job market.
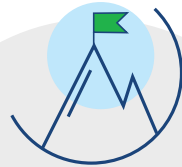
DEPARTMENT OF MECHANICAL ENGINEERING

Prof. Dr. Liaqat Ali
Chairperson

Vision
Endure to propagate knowledge and perpetuate truth for prosperity.

Mission
The mission is to produce professionals well-versed in the knowledge of their respective domain and its application in the service of industry and community for creating innovative solutions keeping in view the ethical, environmental and societal concerns.

The present day development on the face of the earth owes a lot to mechanical engineering. It will be appropriate to call it the mother of all engineering disciplines. Its role and importance stands out as an undeniable fact worldwide. The knowledge, creativity and analytical tools provided by the various disciplines of mechanical engineering enable the students bring about positive and useful transitions and innovations. The borders of the realm to mechanical engineering outreach disciplines like aerospace engineering, Civil Engineering, electrical engineering, petroleum engineering, mechatronics and chemical engineering, which makes its role very pivotal. A mechanical engineer utilizes core engineering principles augmented by computer aided engineering tools and product lifecycle management for designing and analyzing manufacturing plants, industrial equipment and machinery, heating and cooling systems, transport systems, aircrafts, watercrafts, robotics, medical devices and much more. It will not be unjust to say that mechanical engineers bring betterment and ease in the lives of people in every society.

The BS, MS and PhD programs of the department are duly accredited by the Pakistan Engineering Council (PEC) and the Higher Education Commission (HEC). The world renowned Outcome Based Education (OBE) system under the Washington Accord is followed in the department. This helps us implement and follow international standards in the teaching learning and evaluating process, which in turn is very helpful for students when it comes to furthering their higher educational pursuits abroad. The department also firmly believes in academia-industry linkages, which further strengthens learning of our students. They get practical learning and research opportunities like this, so industrial visits are an integral and vital feature at the department of mechanical engineering.

We actively involve our students in research fields like production and manufacturing, machine fabrication, machine component designing, human powered vehicles, thermo fluids, structures and materials, renewable energy resources, material characterization and optimization, solar system manufacturing and so on. The department houses 12

well equipped laboratories for carrying out experimentations by students in the various fields of mechanical engineering. We are really grateful to Heavy Industries Taxila (HIT) for extending their patronage to our students to conduct various supervised projects, by offering their facilities. We believe that it is the environment, conducive to learning that helps a student, nurture creativity and

entrepreneurial leadership through abroad based education. Hence, a special emphasis is laid on developing skills such as having an analytical bent of mind, logical reasoning, problem solving approach and other soft skills to perform in teams effectively, in different working environments. Similarly, students cultivate a solid background in fluid mechanics, material science, design, heat transfer, dynamics, thermodynamics and manufacturing for application within an industrial context.

It will be unjust, not to mention the highly qualified, self-motivated and experienced faculty of the department of mechanical engineering. They are the real strength of the department and make it all happen efficiently. The faculty, along with imparting quality education also remains involved in research activities and supervision of the students in their projects and extra-curricular pursuits. They work as active and efficient team members, who with their professional competence discharge their duties diligently to further the objective of imparting quality education.

Faculty

Dr. S. Kamran Afaq (HEC Approved Supervisor)

Designation: Professor / Dean Faculty of Engineering & Technology
Qualification: PhD University Paol Sabatier, Toulouse III, France
Area of Interest: Composite Material Structures (Design & Testing), Heat Transfer, Finite Element Analysis
Contact: kamran.afaq@hitecuni.edu.pk

Dr. Liaqat Ali (HEC Approved Supervisor)

Designation: Professor and Chairman
Qualification: PhD, Loughborough University, Leicestershire, UK
Area of interest: Workshop Technology, Manufacturing Processes, CAD/CAM
Contact: Liaqat.ali@hitecuni.edu.pk

Dr. Abdul Waheed Badar (HEC Approved Supervisor)

Designation: Associate Professor
Qualification: PhD Technical University of Berlin, Germany
Area of interest: Solar Thermal Systems, Refrigeration and Air Conditioning, Heat Transfer
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Dr. Khalid Mahmood (HEC Approved Supervisor)

Designation: Associate Professor
Qualification: PhD (Mechanical Engineering) The University of Manchester, UK
Area of interest: Laser Material Processing, Additive Manufacturing
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Dr. Fahad Sarfraz Butt (HEC Approved Supervisor)

Designation: Assistant Professor
Qualification: PhD(Mechanical Engineering) The University of Manchester, UK
Area of Interest: Computational Fluid Dynamics
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Dr. Muhammad Farhan Ausaf(HEC Approved Supervisor)

Designation: Assistant Professor
Qualification: PhD Huazhong University of Science & Technology, China
Area of interest: Optimization, Process Planning & Scheduling and Advance Heuristic A lgorithms
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Dr. Atta Ur Rehman Shah (HEC Approved Supervisor)

Designation: Assistant Professor
Qualification: PhD Mechanical Engineering, Changwon National University, South Korea
Area of interest: Composite Materials, Natural Fiber Composites, Polymer Composites, Mechanics of Materials, Fracture Mechanics, Finite Element Analysis
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Dr. Muhammad Zahid Iqbal Qureshi (HEC Approved Supervisor)

Designation: Assistant Professor
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Area of Interest: Computational Wind Engineering, Bluff body aerodynamics, Thermo fluids
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Dr. Tanveer Ahmed

Designation: Assistant Professor
Qualification: PhD Composite Materials, NUST, Islamabad
Area of Interest: Composite Materials, Manufacturing Management, Renewable Energy Systems
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Dr. Syed Maaz Hasan

Designation: Assistant Professor
Qualification: PhD Mechanical Engineering, NUST, Islamabad.
Area of Interest: Design, Modeling and Simulation, Manufacturing
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Dr. Luqman Ahmad Nizam

Designation: Assistant Professor
Qualification: PhD Mechanical Engineering, UET, Taxila.
Area of Interest: Vibrations, Structural Design of Heat Exchanges, Condition Monitoring
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Syed Adeel Akhtar Shah

Designation: Assistant Professor
Qualification: MA English Literature, University of Peshawar, MBA (Marketing), Preston University Islamabad VLLB, University of Peshawar
Area of Interest: Creative Writing, Report Writing, Communication Skills
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Mr. Athar Hameed

Designation: Assistant Professor
Qualification: MSc Mechanical Engineering, UET, Taxila. PhD (In Progress)
Area of Interest: Applied Mechanics and Design, Theory of Machines & Mechanisms, Materials Engineering
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Mr. Abdul Aleem

Designation: Assistant Professor
Qualification: MSc (Industrial and Manufacturing Engineering), UET, Taxila
Area of Interest: Project Management, Quality Assurance/ Quality Control, Industry Academia Linkage.
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Dr. Saad Arif

Designation: Assistant Professor
Qualification: MS Mechatronics Engineering, NUST Islamabad. PhD (In progress)
Area of Interest: Mobile Manipulation Systems, Brain Computer Interfaces, Machine Learning & Computer Vision
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Dr. Zarak Khan

Designation: Assistant Professor
Qualification: MS Design & Manufacturing Engineering, NUST, Islamabad. PhD (In Progress)
Area of Interest: Additive Manufacturing, CAD/ CAM, SMART Materials
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Mr. Moeen Mahboob

Designation: Lecturer
Qualification: MS Mechatronis Engineering, NUST, Islamabad
Area of Interest: Robotics, Instrumentation, Control systems & Prosthesis
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Mr. Imran Sajid Shahid Ghumman

Designation: Lecturer
Qualification: MS Mechanical Engineering, HITEC University, Taxila. PhD (In Progress)
Area of Interest: Composites Materials, Reverse Engineering, Tribology, IC Engines
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Mr. Yasir Hamid

Designation: Lecturer
Qualification: MS Mechanical Engineering, HITEC University, Taxila. PhD (In Progress)
Area of Interest: Tribology, CFD, Newtonian & Non-Newtonian Fluids, Heat Transfer
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Mr. Sardar Shahbaz Ali Naqvi

Designation: Lecturer
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Area of Interest: Advanced Manufacturing, Lean Six Sigma, Supply Chain Management, Clean Coal Technology, Design of Machine
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Mr. Muhammad Mahad Shah

Designation: Lecturer
Qualification: MS Mechanical Engineering, NUST, Islamabad. PhD (In Progress)
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Mr. Ammar Akram

Designation: Lecturer
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Area of Interest: Thermal System Engineering, Vibrations.
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Mr. Ahmed Zaheer

Designation: Lecturer
Qualification: MS Mechanical Engineering, University of Leicester, UK
Area of Interest: Energy Systems Engineering, Fluid Dynamics, Finite Element Analysis Engineering Materials.
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Mr. Bilal Haider

Designation: Lecturer
Qualification: MS Mechanical Engineering, Mechanical Engineering, UET Taxila
Area of interest: Design of Machine Elements, Heat & Mass Transfer.
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Ms. Munaza Haq
Designation: Lecturer
Qualification: MS Mechanical Engineering, UET Taxila
Area of interest: Energy Engineering, Heat and Mass Transfer, Fluid Mechanics
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Ms. Atiya Sadiq
Designation: Lecturer
Qualification: BSc Mechanical Engineering, UET, Taxila. MS (In Progress)
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Mr. Sardar Muhammad Aneeq Khan
Designation: Lecturer
Qualification: MS Mechanical Engineering, HITEC University, Taxila
Area of Interest: Heat Transfer, Solar Thermal Systems
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Mr. Ghulam Mubashir
Designation: Lecturer
Qualification: MS English
Area of interest: Linguistic Pragmatic
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Mr. Aman Ullah Barlas
Designation: Lab Engineer
Qualification: BS Mechanical Engineering, HITEC University, Taxila
Area of interest: Computational Fluid Dynamics
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Mr. Hammad Ahmed
Designation: Lab Engineer
Qualification: MS Mechanical Engineering, HITEC University, Taxila
Area of Interest: Engineering Mechanics Lab. IC Engine Lab
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Mr. Ch. Muhammad Usama
Designation: Lab Engineer
Qualification: BS Mechanical Engineering, HITEC University, Taxila
Area of Interest: Thermodynamics, Refrigeration & Air Conditioning, Design
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BS MECHANICAL ENGINEERING

BS MechanicalEngineering

Education is the foundation upon which we build our future."

Christine Gregorie

The BS Mechanical Engineering program is duly accredited by the Pakistan Engineering Council (PEC) and hence it is in line with the guidelines and requirements of both the PEC and the HEC Higher Education Commission of Pakistan. This academic degree is awarded to students after successful completion of their four years study, spanning over eight semesters.

Some of the most important fields in which students broaden their knowledge, during this four year program are; statics, dynamics, control systems, vibrations, theory of machines, mechanics of materials, heat transfer, IC engines, fluid mechanics, thermodynamics, manufacturing processes and design of machine elements.

In order to extend the cognitive and affective domains of learning and to make it more practical by fulfilling the requirements of the psychomotor domain, students are provided with experimenting opportunities in the 14 well equipped laboratories for various engineering disciplines. These labs are well furnished and equipped with latest equipment to help students learn in a befitting manner. Moreover, software applications like CAD/CAM, CAE, CNC, ANSYS and MATLAB also augment the lab usage. This lays emphasis on practical aspect of learning and shapes the phenomenon in tangible terms, right according to the requirements of the Washington Accord, under OBE Outcome Based Education.

Scheme of Study

Semester-1

Code	Course Title	Cr. Hr.
MT-101	Calculus and Analytic Geometry	3 + 0
BS-102	Engineering Chemistry	2 + 0
BS-103	Applied Engineering Physics	2 + 0
EC-110	Computing Fundamentals	2 + 1
HS-101	English	3 + 0
HS-102	Pakistan Studies	2 + 0
ME-101	Workshop Technology	0 + 2
	Total Credit Hours	**17**

Semester-2

Code	Course Title	Cr. Hr.
MT-303	Applied Linear Algebra	2 + 0
EE-220	Fundamental of Electrical Engineering	3 + 0
IS-211	Islamic Studies	2 + 0
HS-103	Communication Skills	3 + 0
ME-104	Engineering Drawing & Graphics	0 + 2
ME-105	Engineering Statics	3 + 0
ME-202	Material Science & Engineering	2 + 0
EE-220L	Fundamental of Electrical Engineering Lab	0 + 1
QT-101	Translation of the Quran : (Beliefs)	1+0(NC)
	Total Credit Hours	**18**

Semester-3

Code	Course Title	Cr. Hr.
MT 201	Complex Variables & Transforms	3 + 0
HS 201	Technical Report Writing	3 + 0
ME 102	Thermodynamics-I	3 + 0
ME 201	Engineering Dynamics	3 + 0
ME 205	Mechanics of Material-I	3 + 0
ME 303	Manufacturing Process	2 + 0
ME 201L	Engineering Mechanics Lab	0 + 1
	Total Credit Hours	**18**

Semester-4

Code	Course Title	Cr. Hr.
MT-103	Differential Equations	3 + 0
ME 103	Fluid Mechanics-I	3 + 0
EE-320	Analog & Digital Systems	3 + 0
ME-204	Thermodynamics-II	3 + 0
ME-301	Mechanics of Material-II	3 + 0
EE-320L	Analog & Digital Systems Lab	0 + 1
ME-204L	Thermodynamics Lab	0 + 1
ME-205L	Mechanics of Mateial Lab	0 + 1
HS-203	Community Service	0+1(NC)
QT-201	Translation of the Quran: Worships	1+0(NC)
	Total Credit Hours	**18**

Semester-5

Code	Course Title	Cr. Hr.
MT-202	Numerical Methods	2 + 1
ME-206	Heat & Mass Transfer	3 + 0
ME-302	Theory of Machines	3 + 0
ME-304	Design of Machine Elements-I	3 + 0
ME-203	Fluid Mechanics-II	3 + 0
ME-308L	Design of Machine Elements Lab	0 + 1
ME-203L	Fluid Mechanics Lab	0 + 1
	Total Credit Hours	**17**

Semester-6

Code	Course Title	Cr. Hr.
MT 302	Probability & Statistics	3 + 0
HS 401	Professional Values and Ethics	2 + 0
ME 305	Refrigeration & Air Conditioning	3 + 0
ME 308	Design of Machine Elements -II	3 + 0
ME 405	Instrumentation & Measurement	2 + 0
ME 307	Mechanical Vibrations	3 + 0
ME 305L	Heat Transfer & Refrigeration Lab	0 + 1
ME 307L	Theory of Machines / Vibrations Lab	0 + 1
TQ-301	Translation of the Quran: Moral Values	1+0 (NC)
	Total Credit Hours	**18**

Semester-7

Code	Course Title	Cr. Hr.
HS-402	Economics	2 + 0
ME-306	I.C Engines	3 + 0
ME-401	Design Project-I	0 + 3
ME-403	Control Systems	3 + 0
ME-404	CAD/CAM	2 + 0
ME-306L	I.C Engines Lab	0 + 1
ME-403L	Instrumentation & Control Systems Lab	0 + 1
ME-404L	CAD/CAM Lab	0 + 1
	Total Credit Hours	**16**

Semester-8

Code	Course Title	Cr. Hr.
HS-403	Management & Entrepreneurship	3 + 0
ME-401	Design Project-II	0 + 3
ME-4XX	Elective-I	3 + 0
ME-4XX	Elective-II	3 + 0
ME-407	Health Safety and Environment	1 + 0
HS-404	Foreign Language	1 + 1
QT-401	Translation of the Quran: Dealing and Commandments	1+0(NC)
	Total Credit Hours	**15**

*Non Credited Course (NC)

Elective Courses

Code	Course Title	Cr. Hr.
ME-402	Power Plant	3 + 0
ME-410	Gas Dynamics	3 + 0
ME-411	Computational Fluid Dynamics	3 + 0
ME-412	Industrial Engineering	3 + 0
ME-413	Finite Element Analysis	3 + 0
ME-415	Optimization	3 + 0
ME-416	Renewable Energy Resources	3 + 0
ME-418	Tribology	3 + 0
ME-421	Advanced Manufacturing Techniques	3 + 0
ME-422	Advanced Stress Analysis	3 + 0
ME-423	Experimental Stress Analysis	3 + 0
ME-425	Engineering Entrepreneurship	3 + 0
ME-426	Mathematical Modeling and Simulation	3 + 0
ME-427	Robotics	3 + 0
ME-428	Maintenance Engineering	3 + 0
	Total Credit Hours	16

Sr. No	Name of Laboratories
1	Fluid Mechanics Lab
2	Theory of Machine Lab
3	Instrumentation and Control Lab
4	Thermodynamics Lab
5	CNC Lab
6	HMT & RAC Lab
7	Engineering Mechanics Lab
8	Mechanics of Material Lab
9	IC Engine Lab
10	Machine Lab
11	Welding Lab
12	Drawing Hall
13	CFD Lab
14	Project Lab

Undergraduate Laboratories

Mechanical Engineering program at HITEC University is very well supported by laboratory work. Experimental work related to different subjects is carried out in our relevant teaching labs. The Mechanical department has some labs with state of the art equipment (CNC machines, Power plant, universal testing machine, fatigue testing machines and Internal combustion engines etc.)

MS Mechanical Engineering

"An investment in knowledge pays the best interest." Benjamin Franklin

This program offers students with an opportunity of exploring more and to step into the world of higher studies, where they can open a new vista of learning for themselves in the various fields of mechanical engineering. Possession of a BS/BE degree in Mechanical Engineering, Mechatronics Engineering or Aerospace Engineering with a minimum CGPA 2 out of 4 is a must and a pre requisite for those desirous to take admission in the MS program. Moreover, candidates must also have passed the GAT university exam as per the prevailing requirements of the HEC.

A student can select from a list of offered courses in the semester, but it is advisable to choose a course which is suitable from the point of view of MS research project, which is assigned on the successful completion of coursework. Similarly, completion of 30 credit hours of graduate courses is compulsory and likewise completion of 6 credit hours of research thesis is also mandatory. There are excellent research resources available in the university and the faculty that teaches and supervises the MS program is mostly foreign qualified.

PhD Mechanical Engineering

"Education is the most powerful weapon which you can use to change the world."
Nelson Mandela

The PhD program consists of minimum 18 credit hours of post graduate level course work and 30 credit hours of research thesis. This is the highest degree awarded by the department of Mechanical Engineering and it is highly recommended for those scholars, who aspire to further their careers in academia or research, both in public or private sector organizations.

PhD degree enables the scholars to carry out independent research in turn to be published in national and international journals of repute. Candidates desirous for admission in the PhD program must possess MS degree with a minimum CGPA 3 out of 4. Moreover, the candidate must also have passed the GAT subject exam as per the prevailing HEC requirements.

This program is designed to equip candidates with high level of scholarship, in the light of growing international trends and techniques, in the field of Mechanical Engineering. Therefore, the program is supervised by mostly foreign qualified and highly experienced faculty to cater for the needs of the scholars, to enhance their analytical skills and to enable them attain the required level of expertise in the selected area.

Scholars undergo a comprehensive examination after the completion of their course work. It is after this phase that the candidacy as a PhD researcher is granted. The performance and progress of the scholars; right from their selection, course work, research and thesis stages are monitored and evaluated by the Graduate Evaluation Committee GEC.

MS/PhD Courses

Code	Course Title	Cr. Hr.
ME-838	Advanced Heat Transfer	3 + 0
ME-818	Advanced Fluid Mechanics	3 + 0
ME-813	Advanced Solid Mechanics	3 + 0
ME-811	Finite Element Analysis	3 + 0
ME-816	Advanced Thermodynamics	3 + 0
ME-819	Computational Fluid Dynamics	3 + 0
ME-829	Engineering Design and Optimization	3 + 0
ME-837	Radiation Heat Transfer	3 + 0
MT-839	Advanced Numerical Techniques	3 + 0
ME-840	Gas Dynamics	3 + 0
ME-843	Advanced Refrigeration	3 + 0
ME-861	Boundary layer Flows	3 + 0
ME-862	Introduction to Turbulent Flows	3 + 0
ME-838	Theory of Turbo Machinery	3 + 0
ME-869	Flow Induced Vibrations	3 + 0
ME-832	Advanced Dynamics	3 + 0
ME-824	Advanced Robotics	3 + 0
ME-865	Advanced Control Systems	3 + 0
ME-860	Solar Thermal Systems	3 + 0
ME-868	Advanced Mechanical Vibrations	3 + 0
ME-844	Design of Thermal System	3 + 0
ME-867	Sustainable Renewable Energy Systems	3 + 0
ME-812	Advanced Material Science and Engineering	3 + 0
ME-900	Special Topics	9 + 0
ME-823	Manufacturing System	3 + 0
ME-835	Theory of Plates and Shell	3 + 0
ME-842	Finite Element Analysis of Composite Materials	3 + 0
ME-863	Mechanics of Manufacturing Processes	3 + 0
ME-870	Additive Manufacturing	3 + 0
ME-866	Design for Manufacture and Assembly	3 + 0
ME-820	Experimental Stress Analysis	3 + 0
ME-831	Fracture Mechanics	3 + 0
ME-830	Mechanics of Composite Materials	3 + 0
ME-841	Advanced Mechanical Behavior of Materials	3 + 0
ME-815	Advanced Theory of Elasticity	3 + 0

Student Chapters

ASME Student Chapter (American Society of Mechanical Engineers).

American Society of Mechanical Engineers is a professional association that, in its own words, "promotes the art, science, and practice of multidisciplinary engineering and allied sciences around the globe" via "continuing education, training and professional development, codes and standards, research, conferences and publications, government relations, and other forms of outreach." ASME Student Chapter was inaugurated in HITEC University in Sep. 2011, it is regularly conducting various events among the students such as tutorials and seminars, industrial tours, competitions and conferences etc. It is currently managing 180 members and has its own webpage: asmehitec.webs.com and official email: asme@hitecuni.edu.pk. Dr. S. Kamran Afaq is its advisor.

ASME HITEC student chapter arranged Human Power Vehicle Contest (HPVC) every year to explore the technical skills of students. ASME HITEC student chapter organized various technical and informational events every year since 2011 such as:

- Water rocket competition
- Avion faire competition
- Egg drop competition
- Glider design competition
- Metheletics
- Industrial visits

SMEP Student Chapter (Society of Mechanical Engineers of Pakistan).

The Society of Mechanical Engineers of Pakistan aims at providing a platform to the Mechanical Engineers to enhance their professional expertise, introduce standardization, improve quality of education, provide with growth opportunities etc. Student chapter of SMEP was inaugurated on 6th March 2013 with the intention to be one of the most active student societies.

ASHRAE Student Chapter (American Society of Heating Refrigerating Air conditioning).

ASHRAE the American Society of Heating, Refrigerating and Air Conditioning Engineers, founded in 1894, is a building technology society with more than 54,000 members worldwide. The Society and its members focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability within the industry. ASHRAE HITEC University Student Chapter was inaugurated on March, 6th 2014 and currently being supervised by Dr. Abdul Waheed Badar.

"HiRoboTec" Society

"HiRoboTec" is the society put forward by the Department of Mechanical Engineering which handles training and events related to Robotics & Automation. The responsibilities of this society include organization of multi-university events as well as workshops, trainings, and seminars. The premier event organized by this society is the "Robo Fiesta". It is an annual event organized by the society "HiRoboTec" from Department of Mechanical Engineering whose domain of focus is Robotics, Automation and Mobile Robots. The major events include: Robotic Arm,
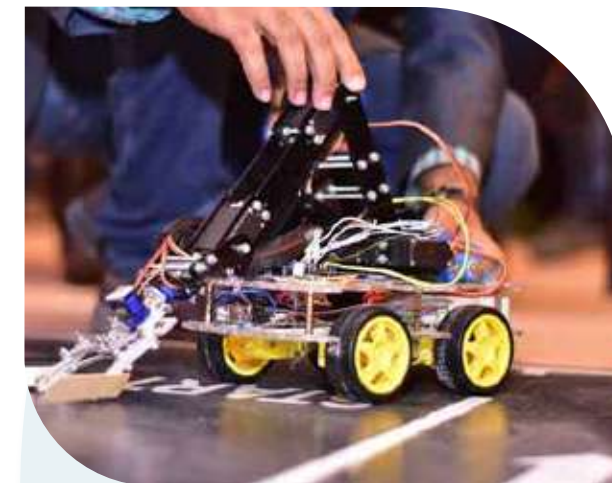
Walking Robot, Hopping Robot, Fire Fighting Obstacle, Obstacle detection in maize, Enhanced Line Follower, Clear the Table, Sumo Wrestle, Robo War, Robot Exhibition and Recreational night
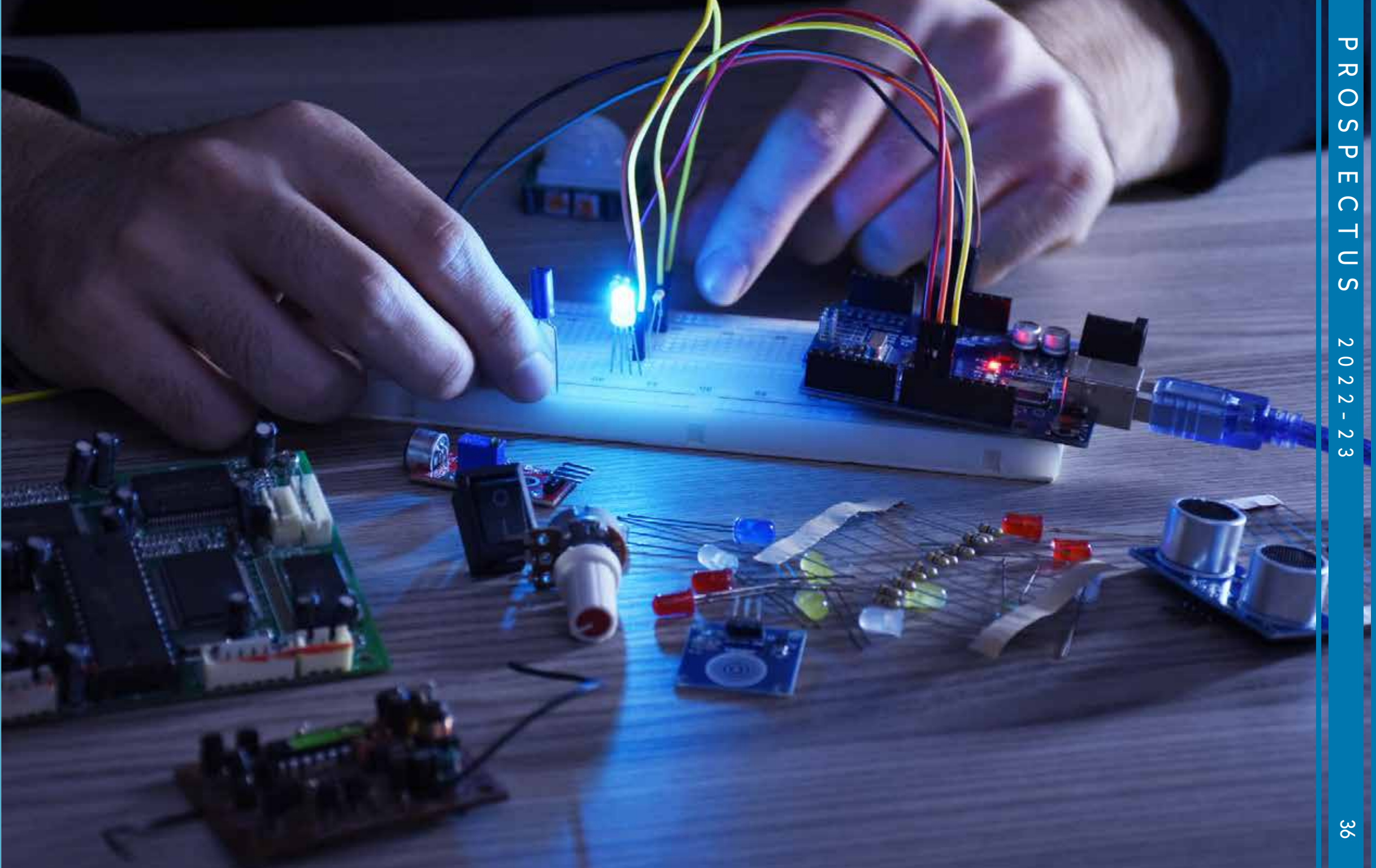
Professor Dr. Tahir Nadeem Malik
Acting Chairperson

The Department of Electrical Engineering Since its inception has been amplifying HITEC's claim of playing a pivotal role in imparting quality education at both undergraduate and postgraduate levels, promoting result-oriented research, and training students to utilize their potentials; thereby, catering to the ever-increasing demand of the qualified, trained, and skilled workforce, at home and abroad, by producing highly-motivated and professionally-competent engineers with an extensive caliber of personal, social, cognitive, and project management skills.

Our study programs, in conjunction with a highly conducive environment, carefully-planned core and elective courses, lab work, curricular and co-curricular activities, mentored research support, regularly held seminars and conferences, internships, professional trainings, counseling, and community service, aim at educating personally, professionally, and ethically dependable and inventive engineers who are not only well-equipped theoretically but also have hands-on experience of using modern engineering tools.

The curricula and syllabi of BS, MS, and PhD programs are well-planned and designed according to recommendations and guidelines of Higher Education Commission (HEC) and Pakistan Engineering Council (PEC). The BS Engineering program is duly accredited by Pakistan Engineering Council under OBE system, whereby, our graduates are readily accepted in the local as well as international job market where they are valued for their specialized knowledge, ability to communicate and solve problems, and for having a strong entrepreneurial spirit.

The teaching staff of the Department is highly qualified, erudite, motivated, and dedicated, with outstanding professional experience and abilities to take education and learning into uncharted waters. Our exceptional and committed faculty members not only excel in their areas of specialization but also keep themselves abreast of the advancements in teaching methodologies. These distinguished faculty members align with our values of scholarship, research, and service by radically changing existing processes and re-engineering new ones, periodically updating curriculum and course contents to meet the ever-changing requirements of the volatile industrial trends, mapping curricular and extra-curricular activities into a meaningful and unswerving educational experience, creating opportunities for the students to exhibit their abilities and talents, and publishing good quality research work in journals with high impact factor.

I would like to avail this opportunity to welcome you to join our undergraduate and postgraduate programs; and I assure you, on behalf of all faculty members, that we will help you to pursue your dreams in a diverse social, cultural, and educational environment.

Faculty

Dr. Tahir Nadeem Malik (HEC Approved Supervisor)
Designation: Professor/Dean QA&C
Qualification: PhD Electrical Engineering, UET, Taxila
Areas of Interest: Power System Analysis, Operation & Control, Smart Grid, AI Application in Power Systems
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Dr. Syed Kashif Imdad (HEC Approved Supervisor)
Designation: Assistant Professor
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Dr. Muhammad Ali Mughal (HEC Approved Supervisor)
Designation: Assistant Professor
Qualification: PhD, Beihang University, Beijing, China
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Engr. Zeeshan Ahmad
Designation: Assistant Professor
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Engr. Iftikhar Ahmed
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Qualification: MS (Electrical Engineering), COMSATS, Islamabad, PhD (In Progress)
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Engr. Muhammad Shahbaz Khan
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Engr. Muhammad Shahzad

Designation: Lecturer
Qualification: MS (Electrical Engineering), HITEC University, Taxila, PhD (In Progress)
Areas of Interest: VLSI, Embedded System, Power Protection, and Electrical Machines
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Engr. Safee Ullah

Designation: Lecturer
Qualification: MS (Electrical Engineering), HITEC University, Taxila, PhD (In Progress)
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Engr. Waqas Ali

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Engr. M. Kashif Sattar

Designation: Lecturer
Qualification: MS (Electrical Engineering), UET, Taxila
Areas of Interest: Power Systems andOptimization Techniques
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Mehwish Bibi
Designation: Lab Engineer

Qualification: BS (Electrical Engineering), HITEC University, Taxila
Areas of Interest: Embedded Systems, Microprocessor
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Mustansir Karim

Designation: Lab Engineer
Qualification: BS (Electrical Engineering), HITEC University, Taxila, MS (In Progress)
Areas of Interest: Power Systems, Power System Analysis
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Engr. Nouman Saeed

Designation: Lab Engineer
Qualification: BS (Electrical Engineering), UET Taxila
Areas of Interest: Power Electronics, Electronic System Design
Contact: nouman.saeed@hitecuni.edu.pk

BS Electrical Engineering

BS Electrical Engineering is a broad-based bachelor degree program which is duly accredited by PEC at level-II, Washington Accord, and includes the study of subjects like Digital and Analog Electronics, Electromagnetic Fields, Control Systems, Communication Systems, Power Engineering, etc. The curriculum is in line with the requirements of Pakistan Engineering Council (PEC) and is comprehensive enough to meet all challenges and requirements of the field of Electrical Engineering at national and international levels. The program provides the students with the skills required for a broad range of jobs in industry, government, academia, business, and R&D organizations.

In an attempt to better serve our undergraduate students and to shorten the time between their discovering a problem and getting advice concerning its solution, the Department has setup an open advising system that provides counseling and support to the students in getting through academic and administrative issues and establishing a smooth working relationship within the Department. Each faculty member is assigned the duty of a class advisor and the students are encouraged to interact with him/her as well as with the entire faculty, so that, after the completion of BS program, they have better understanding of their field of choice.

The courses in the first four semesters of the program are same for all students; however, from the fifth semester and after, elective courses are offered to make provision for the two major streams, that is, Electronics and Telecom Engineering and Power Engineering. The courses are so designed that they establish strong academic foundation and ascertain the candidates' knowledge and skills for specialized and career-oriented opportunities.

After the completion of the program, the degree of BS Electrical Engineering is conferred upon the students; with the transcript clearly reflecting the sequence of subjects as per adopted stream. The program spans over four years (eight semesters) and comprises 136 credit hours.

Scheme of Study
BS Electrical Engineering (Power, Electronics, Telecom)

Semester-1

Code	Course Title	Cr. Hr.
HS-101	English	3+0
MT-101	Calculus and Analytical Geometry	3+0
EE-102	Linear Circuit Analysis	3+0
EC-110	Computing Fundamentals	2+1
EE-101	Workshop Practice	0+1
BS-104	Applied Physics	3+0
EE-102L	Linear Circuit Analysis Lab	0+1
BS-104L	Applied Physics Lab	0+1
QT-101	Translation of the Quran: Beliefs	1+0(NC)
	Total Credit Hours	**18**

Semester-2

Code	Course Title	Cr. Hr.
MT-103	Differential Equations	3+0
HS-201	Technical Report Writing	3+0
IS-211	Islamic Studies	2+0
HS-102	Pakistan Studies	2+0
EC-112	Object Oriented Programming	2+1
EE-103	Electrical Network Analysis	3+0
EE-103L	Electrical Network Analysis Lab	0+1
HS-203	Community Service	0+1 (NC)
	Total Credit Hours	**17**

Semester-3

Code	Course Title	Cr. Hr.
MT-201	Complex Variables & Transforms	3+0
HS-103	Communication Skills	3+0
EE-203	Digital Logic Design	3+0
ME-211	Engineering Drawing	0+1
EC-222	Data Structure & Algorithms	2+1
EE-205	Electronic Devices and Circuits	3+0
EE-203L	Digital Logic Design Lab	0+1
EE-205L	Electronic Devices and Circuits Lab	0+1
QT-201	Translation of the Quran: Worships	1+0(NC)
	Total Credit Hours	**18**

Semester-4

Code	Course Title	Cr. Hr.
HS-401	Professional Values and Ethics	2+0
MT-303	Applied Linear Algebra	2+0
EE-204	Introduction to Embedded Systems	3+0
MT-302	Probability and Statistics	3+0
EE-205	Signal and Systems	3+0
EE-204L	Introduction to Embedded Systems Lab	0+1
EE-205	Signal and Systems Lab	0+1
HS-404	Foreign Language	1+1
	Total Credit Hours	**17**

Semester-5

Code	Course Title	Cr.Hr
EE-309	Electrical Machines	3+0
EE-301	Electromagnetic Theory	3+0
EE-304	Communication Systems	3+0
EE-305	Linear Control Systems	3+0
ME-210	IDEE-I (Engineering Mechanics)	2+0
EE-309L	Electrical Machines Lab	0+1
EE-304L	Communication Systems Lab	0+1
EE-305L	Linear Control Systems Lab	0+1
QT-301	Translation of the Quran: Moral Values	1+0(NC)
	Total Credit Hours	**17**

Semester-6

Code	Course Title	Cr.Hr
MT-202	Numerical Methods	2+1
ME-407	Health Safety and Environment	1+0
EE-3XX	Breath Core-I	3+0
EE-3XX	Breath Core-II	3+0
HS-402	Economics	2+0
EE-3XXL	Breath Core-I Lab	0+1
EE-3XXL	Breath Core-II Lab	0+1
EE-306	Digital Signal Processing	3+0
EE-306L	Digital Signal Processing Lab	0+1
	Total Credit Hours	**18**

Semester-7

Code	Course Title	Cr.Hr
EE-4XX	Depth Elective- I	3+0
EE-4XX	Depth Elective- II	3+0
HS-403	Management and Entrepreneurship	3+0
EE-4XL	Depth Elective- I Lab	0+1
EE-4XL	Depth Elective- II Lab	0+1
ME-427	IDEE- II (Robotics)	3+0
EE-401	Senior Design Project -I	0+3
QT-401	Translation of the Quran: Dealings and Commandments	1+0(NC)
	Total Credit Hours	**17**

Semester-8

Code	Course Title	Cr.Hr
EE-4XX	Depth Elective-III	3+0
EE-4XX	Depth Elective-IV	3+0
EE-4XX	Depth Elective-V	3+0
EE-4XXL	Depth Elective-III Lab	0+1
EE-4XXL	Depth Elective-IV Lab	0+1
EE-401	Senior Design Project -II	0+3
	Total Credit Hours	**14**

*Non Credited Course (NC)

Scheme of Study
BS Electrical Engineering (General Degree)

Semester-1

Code	Course Title	Cr. Hr.
HS-101	English	3+0
MT-101	Calculus and Analytical Geometry	3+0
EE-102	Linear Circuit Analysis	3+0
EC-110	Computing Fundamentals	2+1
EE-101	Workshop Practice	0+1
BS-104	Applied Physics	3+0
EE-102L	Linear Circuit Analysis Lab	0+1
BS-104L	Applied Physics Lab	0+1
QT-101	Translation of the Quran: Beliefs	1+0(NC)
	Total Credit Hours	**18**

Semester-2

Code	Course Title	Cr. Hr.
MT-103	Differential Equations	3+0
HS-201	Technical Report Writing	3+0
IS-211	Islamic Studies	2+0
HS-102	Pakistan Studies	2+0
EC-112	Object Oriented Programming	2+1
EE-103	Electrical Network Analysis	3+0
EE-103L	Electrical Network Analysis Lab	0+1
HS-203	Community Service	0+1 (NC)
	Total Credit Hours	**17**

Semester-3

Code	Course Title	Cr. Hr.
MT-201	Complex Variables & Transforms	3+0
HS-103	Communication Skills	3+0
EE-203	Digital Logic Design	3+0
ME-211	Engineering Drawing	0+1
EC-222	Data Structure & Algorithms	2+1
EE-205	Electronic Devices and Circuits	3+0
EE-203L	Digital Logic Design Lab	0+1
EE-205L	Electronic Devices and Circuits Lab	0+1
QT-201	Translation of the Quran: Worships	1+0(NC)
	Total Credit Hours	**18**

Semester-4

Code	Course Title	Cr. Hr.
HS-401	Professional Values and Ethics	2+0
MT-303	Applied Linear Algebra	2+0
EE-204	Introduction to Embedded Systems	3+0
MT-302	Probability and Statistics	3+0
EE-205	Signal and Systems	3+0
EE-204L	Introduction to Embedded Systems Lab	0+1
EE-205	Signal and Systems Lab	0+1
HS-404	Foreign Language	1+1
	Total Credit Hours	**17**

Semester-5

Code	Course Title	Cr.Hr
EE-309	Electrical Machines	3+0
EE-301	Electromagnetic Theory	3+0
EE-312	Analog & Digital Communication	3+0
EE-305	Linear Control Systems	3+0
ME-210	IDEE-I (Engineering Mechanics)	2+0
EE-309L	Electrical Machines Lab	0+1
EE-312L	Analog & Digital Communication Lab	0+1
EE-305L	Linear Control Systems Lab	0+1
QT-301	Translation of the Quran: Moral Values	1+0(NC)
	Total Credit Hours	**17**

Semester-6

Code	Course Title	Cr.Hr
MT-202	Numerical Methods	2+1
ME-407	Health Safety and Environment	1+0
EE-313	Power Generation, Transmission & Distribution	3+0
EE-307	Computer Communication Networks	3+0
HS-402	Economics	2+0
EE-313L	Power Generation, Transmission & Distribution Lab	0+1
EE-307L	Computer Communication Networks Lab	0+1
EE-308	Electronics Circuit Design	3+0
EE-308L	Electronics Circuit Design Lab	0+1
	Total Credit Hours	**18**

Semester-7

Code	Course Title	Cr.Hr
EE-402	Instrumentation & Measurements	3+0
EE-440	Power System Analysis & Protection	3+0
HS-403	Management and Entrepreneurship	3+0
EE-403	Digital Signal Processing	3+0
EE-401	Senior Design Project -I	0+3
EE-440L	Power System Analysis & Protection Lab	0+1
EE-402L	Instrumentation & Measurements Lab	0+1
EE-403L	Digital Signal Processing Lab	0+1
QT-401	Translation of the Quran: Dealings and Commandments	1+0(NC)
	Total Credit Hours	**18**

Semester-8

Code	Course Title	Cr.Hr
EE- 4XX	Depth Elective- I	3+0
EE-401	Power Electronics	3+0
EE- 4XXL	Depth Elective- I Lab	0+1
EE-401L	Power Electronics Lab	0+1
EE-401	Senior Design Project -II	0+3
	Total Credit Hours	**13**

*Non Credited Course (NC)

Elective Courses (Power):

Code	Course Title	Cr.Hr
EE-309	(Breadth Core I) Power System Analysis	3+1
EE-310	(Breadth Core II) Power Distribution and Utilization	3+1
EE-401	Power Electronics	3+1
EE-402	Instrumentation & Measurements	3+1
EE-404	Power Generation	3+1
EE-405	Electrical Power Transmission	3+1
EE-406	Power System Protection	3+1
EE-407	Power System Operation & Control	3+0
EE-408	Advanced Electrical Machines	3+1
EE-409	Industrial Electronics	3+1
EE-410	High Voltage Engineering	3+1
EE-411	Renewable Energy Systems	3+1
EE-412	Smart Grid	3+1
EE-413	Electrical Machine Design	3+0
EE-414	Machine Learning	3+1
EE-433	AI Tools	3+1
EE-434	Principles and Design of IoT systems	3+1
EE-435	Electric Vehicles	3+0
EE-436	Cyber Security	3+0

Elective Courses (Telecom):

Code	Course Title	Cr.Hr
EE-307	(Breadth Core I) Computer Communication Networks	3+1
EE-308	(Breadth Core II) Electronic Circuit Design	3+1
EE-402	Instrumentation & Measurements	3+1
EE-306	Digital Signal Processing (Core for all stream)	3+1
EE-415	Digital Communications	3+1
EE-416	Wave Propagation and Antennas	3+1
EE-417	Optical Communication	3+1
EE-418	Telecom Transmission and Switching Systems	3+0
EE-419	Wireless and Mobile Communications	3+1
EE-420	Satellite Communication	3+1
EE-421	RF and Microwave Engineering	3+1
EE-422	Navigation and Radar Systems	3+1
EE-423	Digital Image Processing	3+1
EE-414	Machine Learning	3+0
EE-433	AI Tools	3+1
EE-434	Principles and Design of IoT systems	3+1
EE-435	Electric Vehicles	3+1
EE-436	Cyber Security	3+0
EE-409	Industrial Electronics	3+0
EE-401	Power Electronics	

Elective Courses (Electronics):

Code	Course Title	Cr.Hr
EE-307	(Breadth Core I) Computer Communication Networks	3+1
EE-308	(Breadth Core II) Electronic Circuit Design	3+1
EE-401	Power Electronics	3+1
EE-402	Instrumentation & Measurements	3+1
EE-306	Digital Signal Processing (Core for all stream)	3+1
EE-401	Industrial Electronics	3+1
EE-416	Wave Propagation and Antennas	3+1
EE-424	Integrated Electronics	3+1
EE-425	Microelectronics Technology	3+0
EE-426	Optoelectronics	3+1

Elective Courses (Electronics):

Code	Course Title	Cr.Hr
EE-427	VLSI Design	3+0
EE-428	Digital System Design	3+1
EE-429	Introduction to Nanotechnology	3+0
EE-430	Solid State Devices	3+0
EE-431	Digital Control Systems	3+1
EE-421	RF and Microwave Engineering	3+1
EE-432	Biomedical Instrumentation	3+1
EE-437	Medical Robotics	3+1
EE-433	AI Tools	3+1
EE-434	Principles and Design of IoT systems	3+1
EE-435	Electric Vehicles	3+1
EE-436	Cyber Security	3+0

Laboratories

Students are provided with the opportunity of augmenting their theoretical learning through practical work in the state-of-the-art laboratories. These labs are fully equipped, adaptable, reconfigurable, and modular; making them ideally suited for conducting lab experiments designed in coherence with theory, and undertaking research in the fields of Electronics, Telecommunication, Signal Processing, Control Systems, Power Engineering, etc.

The Department of Electrical Engineering has following fourteen well maintained laboratories for the subject programs:

Electronics Lab: Electronics Lab is equipped with diodes, transistors, operational amplifiers, oscilloscopes, power supplies, and function generators to help students practically implement the theoretical concepts of electronic systems.

Digital Systems Lab: Digital Systems Lab is designed to help students understand the digital logic concepts; and consists of oscilloscopes, digital trainers, digital

multi-meters, function generators, 8086 microprocessor kits, and supporting accessories. This lab is also used to aid practical implementation of microprocessor and interfacing techniques.

Communication Systems Lab: Communication Systems Lab helps the students to envision the theoretical communication concepts of both analog and digital communication systems. This laboratory contains different analog and digital communication trainers.

DSP & VLSI Lab: Digital Signal Processing and Very Large-Scale Integration Lab utilizes advanced signal processing tools such as MATLAB, Xilinx, and LABVIEW, to visualize various signal processing techniques including convolution, DFT, FFT, and digital filters designing techniques. DSP kits, TMS 320C6713 DSK, are also provided for advanced stage practical implementations.

Wave-Propagation & Antennas Lab: Wave-Propagation and Antennas Lab comprises of various types of trainers including wave-propagation, microwave-communication, antennas, satellite-communication, and waveguide trainers. These trainers are suitable for the study of generation,

propagation, and reception of microwave signals.

Control Systems Lab: Control Systems Lab consists of multiple workstations, each equipped with an oscilloscope, digital multi-meter, PID trainers, control system trainers, inverted-pendulum, ball and beam control, and magnetic-levitation trainers. This lab also caters for the industrial implementation of advanced control systems via different computer tools such as MATLAB and Simulink.

Electrical Machines Lab: Electrical Machines Lab provides the students with the opportunity to supplement their concepts about the fundamentals of transformers and rotating machines. The lab is equipped with various test and monitoring equipment, DC series shunt motor, compound motor, universal motor, single-phase induction motor, single-phase transformer, three-phase induction motor, three-phase synchronous motor, and three-phase transformer.

Computer Networks Lab: This lab is furnished with data communication LAN, WAN, and MAN trainers and offers students the opportunity to perform practical experiments on data communication techniques and networking methodologies.

Power Generation and Protection Lab: Power Engineering Lab ministers to the improvement of the students' practical skills in the fields of Electrical Power Systems, Electrical Power Generation, and Power System Protection.

Electronic Workshop Lab: Electronic Workshop Lab provides the students with hands on experience of using different electronic measuring equipment's such as oscilloscope, Megger, analog/digital multi-meter, and single/three-phase watt-meters. The lab is also utilized for a variety of engineering subjects including Engineering Workshop, Electric Circuits, Network

Analysis, and Instrumentation and Measurement.

Computing Lab: It is a lab for computer programming-oriented subjects like Structured C, Object Oriented Programming, Java, Computer-aided Engineering Drawing, etc. High speed computers have been installed to provide computing facilities for the aforementioned courses.

Information Technology Lab: This lab provides students with the facilities of high speed internet access, browsing, and surfing to complete their assignments, etc.

Power Transmission and Distribution Lab: Power Transmission and Distribution Lab provides an opportunity to advance the practical skills of the students in the field of Electrical Power Systems, Electrical Power Transmission, and Electrical Power Distribution.

Project Lab: This lab is completely apportioned to the development of projects by final year students and to mini or open-ended projects by the students of Electrical Engineering Department.

High Voltage Lab: High Voltage Lab is equipped with stage 3-Impulse generators, and DC and AC system in addition to partial discharge detection instruments.

MS Electrical Engineering

The Department of Electrical Engineering also offers MS program which essentially entails specialization in Communication Systems, Digital Signal Processing, and Electrical Power and Control Systems.

The MS program in Communication Systems involvesstudying advanced courses like Wireless Communications, Digital Modulation Techniques, Secure Communication, Telecommunication, Switching, and Cryptography. While, the MS program in Signal Processing deals with advanced courses such as DSP, Digital Image Processing, Adaptive Signal Processing, Computer and Machine Vision, and Advanced Computer Networks. The MS program in Electrical Power and Control Systems, on the other hand, exposes the students to Electrical Power Systems, Machine Drives, High Voltage Engineering, Renewable Energy, Linear Control Systems, Robust Control, Adaptive Control, and Fuzzy Control Systems. A student is required to study eight advanced courses and complete a research thesis of six credit hours on the assigned topic. Although the Department exhorts all MS students to opt for research thesis; still, an option is available to take two additional courses in lieu of thesis to qualify for the award of degree.

An MS degree in Electrical Engineering from HITEC University opens the doors for excellent job opportunities in telecommunication, power sector, and process industries as well as strategic organizations in the country and abroad. MS qualified electrical engineering postgraduates are also readily accepted in academic institutions.

PhD Electrical Engineering

PhD in Electrical Engineering is offered as per the guidelines of Higher Education Commission (HEC). The desirous candidates must possess MS degree (18 years) with a minimum CPGA of 3.00, out of 4.00.

The program comprises of 18 credit hours of course work and 30 credit hours of research and a doctorate dissertation. The courses are selected in consultation with the PhD supervisor, from the list of graduate courses.

The completion of coursework is followed by a comprehensive examination for granting PhD candidacy. The PhD dissertation is evaluated by three experts: one Pakistani and two from technologically advanced countries. Subsequent to positive evaluation from these experts, the PhD scholar is required to undertake an open defense to fulfill the degree requirements.

A minimum residency of two years at the University campus and publishing at least one research paper in an impact factor journal of good repute is also an essential requirement to earn a PhD degree.

MS/PhD Courses

Code	Course Title	Cr. Hr.
EE-811	Advanced Digital Signal Processing	3+0
EE-812	Digital Image Processing	3+0
EE-813	Real-Time DSP Design & Applications	3+0
EE-814	GIS and Remote Sensing	3+0
EE-817	Statistical Signal Processing	3+0
EE-818	Adaptive Signal Processing	3+0
EE-819	Array Signal Processing	3+0
EE-820	Advanced Computer Architecture	3+0
EE-821	Stochastic Systems	3+0
EE-822	Information Coding & Theory	3+0
EE-823	Advanced Digital Communication	3+0
EE-824	Secure Communication	3+0
EE-825	Fuzzy Control Systems	3+0
EE-826	Telecommunication & Switching Principles	3+0
EE-827	Optical Fiber Communication	3+0
EE-828	Smart Antennas	3+0
EE-831	Advanced Linear Control Systems	3+0
EE-832	Nonlinear Control Systems	3+0
EE-838	Modern Electrical Drives	3+0
EE-847	Advanced topics in Image & Video Processing	3+0
EE-849	Special topics in Wireless Communications	3+0
EE-844	Research Methodologies	3+0
EE-851	RF Transmission and Antenna Design	3+0
EE-852	Advanced Engineering Electromagnetic	3+0

Code	Course Title	Cr. Hr.
EE-853	Nanomaterials Engineering Applications	3+0
EE-854	Network Optimization	3+0
EE-855	Power System Transients	3+0
EE-856	Satellite Communication	3+0
EE-857	Advanced Power Electronics	3+0
EE-858	High Voltage Engineering	3+0
EE-859	Optimization Techniques in Power System	3+0
EE-860	Power System Operation	3+0
EE-861	Electrical Power Distribution Systems	3+0
EE-862	Reliability Analysis for Power Systems	3+0
EE-863	Advanced Topics in Antenna Design	3+0
EE-866	Semiconductor Physics and Devices	3+0
EE-867	Microwave Network Analysis and Passive Components	3+0
EE-868	Electrical Machine Design	3+0
EE-869	Advance Power System Protection	3+0
EE-870	Wind Energy and Distributed Generation	3+0
EE-872	Advanced Power System Stability & Control	3+0
EE-873	Dielectric and Electrical Insulation Materials	3+0
CS-829	Advanced Computer Vision	3+0
CS-811	Advanced Computer Networks	3+0
EC-802	Advanced Digital Systems Design	3+0

Research Groups, Technology Development, and Incubation Centre

Following research groups are actively working in the Department:

Signal Processing & Communication Systems (SPCS) Research Group

The prime objective of Signal Processing & Communication Systems (SPCS) Research Group is to formulate and implement innovative mathematical and statistical theories related to Signal Processing and Communication Systems. The major research areas of this group include Signal Processing, Secure Communication, RF and Microwave Circuits Analysis, Image Processing and Computer Vision, Wireless Communication, Tracking, and Encryption Techniques.

Power & Control Systems (PCS) Research Group

Multidisciplinary research in Power and Control Systems establishes a constant attention on challenges being faced in this area, at national level. The core aim of the group is to conduct research in the areas of Power System and Control Theory, Applications of Control Systems, Analysis and Design of Future Power Generation and Control System, Power Transmission and Distribution, Adaptive and Robust Control, Renewable Energy Sources, Optical Network Capacity and Control, Optical Routing and Signal Processing, Industrial Control and Automation.

Technology Development & Incubation Centre

HITEC University has embarked upon an ambitious plan to fund start-up companies and provide an eco-system to make these start-ups sustainable business entities. To realize this vision, the Technology Development and Incubation Centre (TDIC) has recently been established in the Department of Electrical Engineering with the aim to provide an infrastructure to faculty members and students to initiate their start-up venture or work on technologies that could be shaped to make tangible products.

Currently, TDIC provides resources such as office space, Internet, financial incentives, and assistance in setting up a business. TDIC also provides mentoring, training and

technical support to help faculty and students accelerate their thought process;thus, enables them to come up with market-driven products. The graduates are expected to play an important role in providing cost-effective solutions to technological challenges faced by our country;and accordingly, strengthening the national economy and improving employment opportunities.

IEEE HITEC student branch

IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity. IEEE is the trusted "voice" for engineering, computing, and technology information around the globe.

IEEE's core purpose is to foster technological innovation and excellence for the benefit of humanity. With competition for the best jobs increasing every year, companies value employee who have relationships with the local community and hone their technical skills outside of work hours. IEEE members are uniquely positioned to provide the innovative solutions needed in technical industries going forward. IEEE Women in Engineering (WIE) is a global network of IEEE members and volunteers dedicated to promoting women engineers and scientists, and inspiring girls around the world to follow their academic interests in a career in engineering and science.

IEEE HITEC student branch comes under the umbrella of IEEE Islamabad sections which is part of IEEE R-10. There are 10 regions of IEEE overall in the world. We believe professionals in technology fields should join IEEE to help themselves and the community. IEEE HITEC student branch is famous for their educational and learning activities. The important yearly events of

IEEE in Pakistan are Pakistan student congress, section congress, IEEE day celebrations, IEEE pes day, wie and other Affinity group events.

IEEE HITEC student branch have also organized technical and non-technical events for students learning and grooming. Currently the branch chair 2021 is Hamza Anwar and vice chair are Farah khaliq Baloch. The Wie chair is shayan fatima. The branch consular is Dr Ashiq Hussain and Mentor is Muhammad Asad Anwar.

List of events organized by HITEC branch:

1-IEEE Islamabad Section Ethics Competition

2-Seminar on artificial intelligence

3-Islamabad student young professional and women in Engineering Congress'17

4-Workshop on PLC, HMI AND SCADA SYSTEM

5-Seminar on solar energy

4-E-GAMING

5-Speed Wiring

BS ROBOTICS AND AUTOMATION

BS Robotics and Automation

BS Robotics and Automation program at HITEC University is an ensemble of electrical, electronics, mechanical, and computer technologies that builds a firm foundation of graduates in the robotics and automation field.

This program focuses on:

1. Development of interdisciplinary skills that provide concepts of the robotic system design by incorporating the relevant aspects of mathematics, electrical, mechanics, electronics, and computer engineering.

2. Provision of state of the art facilities that provide hands-on experience and market ready skills.

Scheme of Study

Semester-1

Code	Course Title	Cr. Hr.
HS-101	English	3+0
MT-101	Calculus and Analytical Geometry	3+0
EE-102	Linear Circuit Analysis	3+0
EC-110	Computing Fundamentals	2+1
EE-101	Workshop Practice	0+1
RB-101	Applied Electronics	3+0
EE-102L	Linear Circuit Analysis Lab	0+1
RB-101L	Applied Electronics Lab	0+1
QT-101	Translation of the Quran: Beliefs	1+0 (NC)
	Total Credit Hours	**18**

Semester-2

Code	Course Title	Cr. Hr.
MT-103	Differential Equations	3+0
HS-201	Technical Report Writing	3+0
IS-211	Islamic Studies	2+0
HS-102	Pakistan Studies	2+0
EC-112	Object Oriented Programming	2+1
EE-103	Electrical Network Analysis	3+0
EE-103L	Electrical Network Analysis Lab	0+1
HS-203	Community Service	0+1 (NC)
	Total Credit Hours	**17**

Semester-3

Code	Course Title	Cr. Hr.
MT-201	Complex Variables & Transforms	3+0
HS-103	Communication Skills	3+0
EE-203	Digital Logic Design	3+0
ME-211	Engineering Drawing	0+1
EC-222	Data Structure & Algorithms	2+1
RB-201	Engineering Mechanics- I	3+0
RB-201L	Engineering Mechanics- I Lab	0+1
EE-203L	Digital Logic Design Lab	0+1
QT-201	Translation of the Quran: Worships	1+0 (NC)
	Total Credit Hours	**18**

Semester-4

Code	Course Title	Cr. Hr.
RB-203	Operating Systems	3+0
MT-303	Applied Linear Algebra	2+0
EE-204	Introduction to Embedded Systems	3+0
MT-302	Probability and Statistics	3+0
RB-202	Engineering Mechanics- II	3+0
RB-202L	Engineering Mechanics- II Lab	0+1
EE-204L	Introduction to Embedded Systems Lab	0+1
RB-203L	Operating Systems Lab	0+1
	Total Credit Hours	**17**

Semester-5

Code	Course Title	Cr. Hr.
EE-309	Electrical Machines	3+0
RB-301	Database Systems	2+0
RB-302	Introduction to Robotics	2+0
EE-305	Linear Control Systems	3+0
EE-304	Communication Systems	3+0
EE-309L	Electrical Machines Lab	0+1
EE-305L	Linear Control Systems Lab	0+1
RB-301L	Database Systems Lab	0+1
RB-302L	Introduction to Robotics Lab	0+1
EE-304L	Communication Systems Lab	0+1
QT-301	Translation of the Quran: Moral Values	1+0(NC)
	Total Credit Hours	**18**

Semester-6

Code	Course Title	Cr. Hr.
MT-202	Numerical Methods	2+1
ME-407	Health Safety and Environment	1+0
RB-306	Robotics & Automation	3+0
RM-303	Robotics Machine Design	3+0
HS-402	Economics	2+0
RB-306L	Robotics & Automation Lab	0+1
RB-305	Signal Processing	3+0
RB-305L	Signal Processing Lab	0+1
	Total Credit Hours	**17**

Semester-7

Code	Course Title	Cr. Hr.
RB-4XX	Depth Elective- I	3+0
RB-4XX	Depth Elective- II	3+0
HS-403	Management and Entrepreneurship	3+0
RB-403	Sensors & Transducers	3+0
HS-404	Foreign Language	1+1
RB-401	Senior Design Project -I	0+3
QT-401	Translation of the Quran: Dealings and Commandments	1+0(NC)
	Total Credit Hours	**18**

Semester-8

Code	Course Title	Cr. Hr.
RB-4XX	Depth Elective- III	3+0
RB-402	Artificial Intelligence	3+0
RB-403	Hydraulic & Pneumatic Actuators	3+0
RB-401	Senior Design Project -II	0+3
HS-401	Professional Values and Ethics	2+0
	Total Credit Hours	**17**

Elective Courses

Code	Course Title	Cr. Hr.
RB-404	Model Predictive Control	3+0
RB-405	Industrial Automation	3+0
RB-406	Mechatronics System Design	3+0
RB-407	Machine Vision	3+0
RB-408	Industrial Drives	3+0
RB-409	Robot Communications	3+0
RB-410	Special Topics in Robotics	3+0

DEPARTMENT OF
CIVIL ENGINEERING

Dr. Sabahat Hussan
Chairperson

Launching the department of Civil Engineering is the latest initiative of HITEC University. It has, however, taken nearly three years of requirement analysis, a deep appraisal of Civil Engineering offered by other institutions and the unique and distinguishing features which should be the Hallmark of our Program. Civil Engineering department of HITEC University enshrines the same attributes due to which our other programs are recognized, at the national and international levels. These attributes are top class faculty, very well equipped laboratories and the unstinted commitments to impart state-of-the-art knowledge. All those who desire to study Civil Engineering must select a university which pursues the Outcome Based Education (OBE) philosophy and functions under the Washington Accord criteria of quality teaching and learning with respect to this vital point. Our Civil Engineering program stands to benefit from our proud legacy of 5-years. The Civil Engineering department has highly qualified and dedicated faculty with diverse

intellect, creativity and talent. The department hosts excellent laboratories stocked with latest equipment and are placed in environmentally controlled premises. Besides its own laboratories, the department shares requisite facilities of Electrical, Mechanical and Computer engineering departments. The department follows the curriculum as per guidelines of Higher Education Commission (HEC) and Pakistan Engineering Council (PEC). The subjects of the program fully meet the diverse knowledge which constitutes vibrant and ever evolving demands of Civil Engineering discipline.

The Civil Engineering department is endowed with all these essentials which are found in any reputed university. We, however, do consider our students to be the most valued asset. If you happen to be those fortunate students who wish to pursue a career in Civil Engineering, we commit to impart the knowledge, the professional skills and a positive attitude to realize your dreams. We will groom you into professionals who are always in demand in the national and international market.

Faculty

Dr. Sabahat Hussan (HEC Approved Supervisor)

Designation: Assistant Professor/Chairman
Qualification: PhD (Civil Engineering), UET, Taxila
Area of Interest: Transportation Engineering, Pavement Materials, Highway Engineering.
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Engr. Yasir Rasheed

Designation: Lecturer
Qualification: MS (Structural Engineering), CECOS University, Peshawar.
Areas of Interest: Dynamics of Structures, Properties of Green Concrete
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Engr. Muhammad Nasir Ayaz Khan

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Area of Interest: Pavement materials and evaluation, Highway and Traffic engineering.
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Engr. Muhammad Ehtsham

Designation: Lecturer
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Engr. Safi-Ur-Rehman

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Engr. Muhammad Irfan
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Engr. Muhammad Usman Khan
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Engr. Aftab Ullah
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Engr. Inayat Ullah Khan
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Area of Interest: Structural Engineering
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Engr. Sarmed Wahab
Designation: Lecturer
Qualification: BSc in civil engineering (UET taxila), MSc structural engineering (in progress)
Area of Interest: Concrete technology and machine learning
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Engr. Mamoonah Rasheed
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BS CIVIL
ENGINEERING

BS Civil Engineering

Civil Engineering usually includes a variety of engineering specialties like structural engineering, transportation systems, fluid mechanics, water resources, geo-systems and environmental engineering etc. Recent regional infrastructure development, consisting of a series of mega projects, to be accomplished under China Pakistan Economic Corridor (CPEC), requires proficient and skilled civil engineers. CPEC is intended to be of strategic importance to Pakistan and entails energy producing projects, enhancing transportation infrastructure, development of dedicated economic zones and boosting the tourism industry. Similarly, the recent water-scarcity awareness at national level highlights the significance of constructing new water reservoirs. Needless to say, that water storage dams and their infrastructure including the downstream distribution networks do require a very large number of competent and well-versed civil engineers.

Civil Engineers are employed in a broad spectrum of engineering situations like construction firms, manufacturing companies, power companies, petroleum industry, mining concerns and consulting engineering firms. Many opportunities for Civil Engineering employment also exist in district, provincial and federal engineering departments as well.

The Department of Civil Engineering has been established in 2019. Currently this department offers BS in Civil Engineering. The curriculum is in line with the requirements of Pakistan Engineering Council (PEC) and is comprehensive enough to meet all challenges and requirements of the field of Civil Engineering both at national and international levels.

In an attempt to facilitate our undergraduate students and to enhance their capability to identify real world problems and recommend economically and environmentally viable solutions, the Department has set up a well-coordinated guiding system that provides counseling and support to the students. Every student is advised and encouraged to interact with other students and faculty members, so that, after the completion of BS program, they have better understanding of their field of choice and contribute to the society as professionally mature team leaders.

After the completion of the program, the degree of BS Civil Engineering is conferred and the accompanying transcript of grades reflecting the sequence of subjects studied and qualified. The program spans over four years (eight semesters) and comprises 136 credit hours.

Scheme of Study

Semester-1

Code	Course Title	Cr.Hr
CE-101	Engineering Drawing	1+2
CE-102	Engineering Mechanics	2+1
IS-211	Islamic Studies	2+0
CE-103	Basic Electro Mechanical Engineering	2+2
MT-101	Calculus and Analytic Geometry	3+0
HS-101	English	3+0
QT-101	Translation of the Quran: Beliefs	*1+0
	Total Credit Hours	**18**

Semester-2

Code	Course Title	Cr.Hr
CE-104	Surveying-I	2+1
CE-105	Engineering Materials	2+1
HS-102	Pakistan Studies	2+0
EC-110	Computing Fundamentals	2+1
MT-104	Linear Algebra and Vector Calculus	2+0
HS-103	Communication Skills	3+0
ES-101	Engineering Geology	2+0
	Total Credit Hours	**18**

Semester-3

Code	Course Title	Cr.Hr
CE-201	Surveying-II	2+1
CE-202	Engineering Practice	3+0
CE-203	Fluid Mechanics-I	2+1
CE-206	Mechanics of Solids-I	2+1
CE-204	Quantity and cost Estimation	2+1
MT-103	Differential Equations	3+0
QT-201	Translation of the Quran: Worships	*1+0
	Total Credit Hours	**18**

Semester-4

Code	Course Title	Cr.Hr
CE-205	Structural Analysis-I	3+0
HS-401	Professional Values & Ethics	2+0
CE-207	Soil Mechanics	3+1
HS-201	Technical Report Writing	3+0
MT-202	Numerical Methods	2+1
HS-301	Construction Planning & Management	2+1
HS-203	Community Service	0+1*
	Total Credit Hours	**18**

Semester-5

Code	Course Title	Cr.Hr
CE-301	Structural Analysis-II	3+0
CE-302	Mechanics of Solids-II	2+1
CE-303	Geo-technical & Foundation Engineering	3+1
MT-302	Probability & Statistics	3+0
CE-304	Hydrology and Water Resources	2+1
HS-402	Economics	2+0
QT-301	Translation of the Quran: Moral Values	*1+0
	Total Credit Hours	**18**

Semester-6

Code	Course Title	Cr.Hr
CE-305	Environmental Engineering-I	2+1
CE-306	Reinforced Concrete Design-I	3+1
CE-307	Transportation Engineering-I	3+0
CE-308	Steel Structures	2+1
CE-309	Fluid Mechanics-II	3+1
ME-407	Health Safety & Environment	1+0
	Total Credit Hours	**18**

Semester-7

Code	Course Title	Cr.Hr
CE-402	Reinforced Concrete Design-II	3+1
CE-403	Transportation Engineering-II	3+1
CE-408	Hydraulics Egnineering	2+1
CE-404	Final Year Design Project-I	0+3
HS-404	Foreign Language	1+1
QT-401	Translation of the Quran: Dealings and Commandments	*1+0
	Total Credit Hours	**16**

Semester-8

Code	Course Title	Cr.Hr
CE-406	Irrigation Engineering	1+1
CE-407	Computed Aided Design of Structures	1+2
CE-404	Final Year Design Project-II	0+3
CE-401	Environmental Engineering-II	2+0
HS-408	Hazards and Disaster Management	2+0
	Total Credit Hours	**12**

*Non Credited Course (NC)

*Successful completion of Survey Camp duly arranged by the department is mandatory for Civil Engineering graduates.

Laboratories

Students are provided with the opportunity of augmenting their theoretical learning through practical work in the state-of-the-art laboratories. These labs are fully equipped, adaptable, reconfigurable, and modular; making them ideally suited for conducting lab experiments designed in coherence with theory, and undertaking research in the fields of Structures, Transportation, Water Resources, Geotechnical Engineering, Environmental Engineering, Construction Engineering & management etc.

The Department of Civil Engineering has following well maintained dedicated laboratories for the subject program:

Surveying Lab: The Surveying Laboratory is fully equipped with the classical and state-of-the-art equipment relevant to the theoretical knowledge taught in couple of surveying courses. The advanced equipment includes electronic total station, electronic digital theodolite, automatic level, a tripod-mounted laser level, walkie talkie sets for communication, and Global Positioning System units; while the traditional equipment consists of measuring chains, measuring tapes, measuring wheels, prismatic compass sets, and plane table sets for field applications of triangulation, traversing, curve layout and chain surveying techniques. This lab satisfies the requirements of two courses, 'Surveying-I' & 'Surveying-II' as per approved scheme of study.

Concrete Technology Lab: Concrete being the most widely used Civil Engineering material in modern era, makes Concrete Technology Laboratory as one of integral laboratory requirement for department of Civil Engineering. It has been equipped with Digi-Max smart line semi-automatic compression and flexural testing machine, core drilling machine, Vicat apparatus, le-chatlier's apparatus, compacting factor apparatus, slump test apparatus, electric motorized concrete and mortar mixers, electric vibrating table, Smidth hammer, poker concrete vibrator, digital Los Angeles machine for aggregate abrasion, standard sieves and sieve shaker set, cylindrical, cubicle and beam molds etc. The laboratory is also facilitated with the adjacent 'curing and storage room' provided for the purpose of storage of constituent materials and curing of concrete specimens as per standard specification procedure. This laboratory satisfies the requirements of three courses, 'Engineering Materials', 'Reinforced Concrete Design-I' and 'Reinforced Concrete Design-II' as per approved scheme of study.

Geo-Technical Engineering Lab: The Geotechnical Engineering Laboratory is purposed to practically apply the basic theoretical concepts regarding the behavior of soil and its interaction with other structural materials. The Laboratory has been equipped with Computer controlled Triaxial Testing Machine, Shear box test apparatus, Vane shear apparatus, Consolidation Apparatus, Standard Penetration Test apparatus, Plate Load Test apparatus, Atterberg limit apparatus, specific gravity apparatus, standard sieves and sieve shaker set, Standard and Modified Proctor test apparatus, soil permeameters, Hydrometer test apparatus, Speedy Moisture tester and Laboratory Ovens. This laboratory satisfies the requirements of two courses, 'Soil mechanics' and 'Geo-technical and Foundation Engineering' as per approved scheme of study.

Fluid Mechanics Lab: The practical understanding of basic concepts of fluid flow is mandatory for analyzing the behavior of hydraulic structures such as dams and barrages. In order to fulfill this requirement, fluid mechanics laboratory has been established and equipped with

Bernoulli's theorem apparatus, Drag Coefficient apparatus, hydraulic bench apparatus, Hydrostatic pressure apparatus, Metacentric Height Apparatus, Flow over weirs apparatus, Dead Weight tester, Viscometer, Orifice Meter etc. In addition to this equipment, advanced equipment in Fluid Mechanics Lab in Mechanical engineering department is shared by Civil Engineering Department. The advanced equipment includes Francis turbine, Osborne's Reynolds apparatus, hydrostatic pressure apparatus, impact jet apparatus, demonstration reaction turbine, Pelton wheel turbine, pipe friction apparatus etc. This laboratory satisfies the requirements of two courses, 'Fluid Mechanics-I' and 'Fluid Mechanics-II' as per approved scheme of study upon completion of ongoing procurement process.

Engineering Mechanics Lab: Demonstrating the basic principles of engineering mechanics at the undergraduate level through a series of experiments is the objective of the mechanics lab. The laboratory has been equipped with verification of concurrent force system apparatus, Beam deflection apparatus, Varignon's apparatus, Center of gravity apparatus, Forces in Jib and crane apparatus, three wire suspension apparatus, forces on inclined plane apparatus and Impact testing machine etc. This laboratory will satisfy the requirements of one course, 'Engineering Mechanics', as per approved scheme of study.

Mechanics of Solids Lab: Demonstrating the basic and advanced principles of mechanics of structural materials at the undergraduate level through a series of experiments is the objective of the mechanics of solids lab. Computer controlled electro hydraulic Universal Testing Machine (UTM) is one of the major

equipment installed in Mechanics of Solids Lab. The laboratory has also been equipped with Impact testing machine, column buckling apparatus, shear center apparatus, cantilever beam apparatus etc. In addition to this equipment, advanced equipment in Mechanics of Materials Lab in Mechanical engineering department is shared by Civil Engineering Department. The advanced equipment includes Brinell hardness tester, digital display torsion testing machine, fatigue testing machine, torsion of rods and bars apparatus, optical microscope, area moment bending apparatus etc. This laboratory satisfies the requirements of two courses 'Mechanics of solids-I' and 'Mechanics of solids-II' as per approved scheme of study.

Transportation Engineering Lab: Transportation Engineering Laboratory provides a platform to undergraduate students to practically apply the theoretical concepts gained in the area of highway engineering, pavement materials and traffic engineering. This laboratory has been fully equipped to conduct standard tests for assessing the quality of pavement materials and evaluating structural and functional performance of pavement. The equipment includes rolling thin film oven apparatus, skid resistance tester, ultrasonic pulse velocity meter, California bearing ratio (CBR) machine, flash and fire point test apparatus, penetration test apparatus, ductility test apparatus, specific gravity apparatus for aggregates, aggregate impact value test apparatus, marshal stability machine, marshal compactor, Theoretical Maximum Specific gravity apparatus etc. This laboratory satisfies the requirements of 'Transportation Engineering-II' course as per approved scheme of study.

Environmental Engineering Lab: Environmental Engineering Laboratory will provide a platform to undergraduate students to apply the theoretical concepts related to water quality assessment, air, solid waste and wastewater treatment. The environmental engineering lab is furnished with facilities for conducting experiments related to water quality assessment, water and waste water treatment and solid waste management. It has been equipped with spectrometer, biological microscope, distillation apparatus, volumetric apparatus, pH meter, turbidity meter, conductimeter, total dissolved solids (TDS) meter, biological oxygen demand (BOD) incubator, dissolved oxygen (DO) meter, desiccator, filtration apparatus, chemical oxygen demand (COD) reactor, Jar test apparatus with all required reagents. This

laboratory satisfies the requirements of 'Environmental Engineering-I' course as per approved scheme of study.

Hydraulics Lab: The Hydraulics Laboratory applies principles of hydraulic flow & modeling and gives undergraduates expertise in solution of hydrology, water resources, hydraulics, and irrigation engineering problems. The laboratory has been equipped with advanced equipment which includes hydraulic flume, pipe surge and water hammer apparatus, basic hydrology apparatus, current meter, steel and acrylic rain gauge, infiltrometer, anemometer etc. This laboratory satisfies the requirement of two courses, 'Hydraulics & Irrigation Engineering' and "Hydrology & Water Resources' as per approved scheme of study.
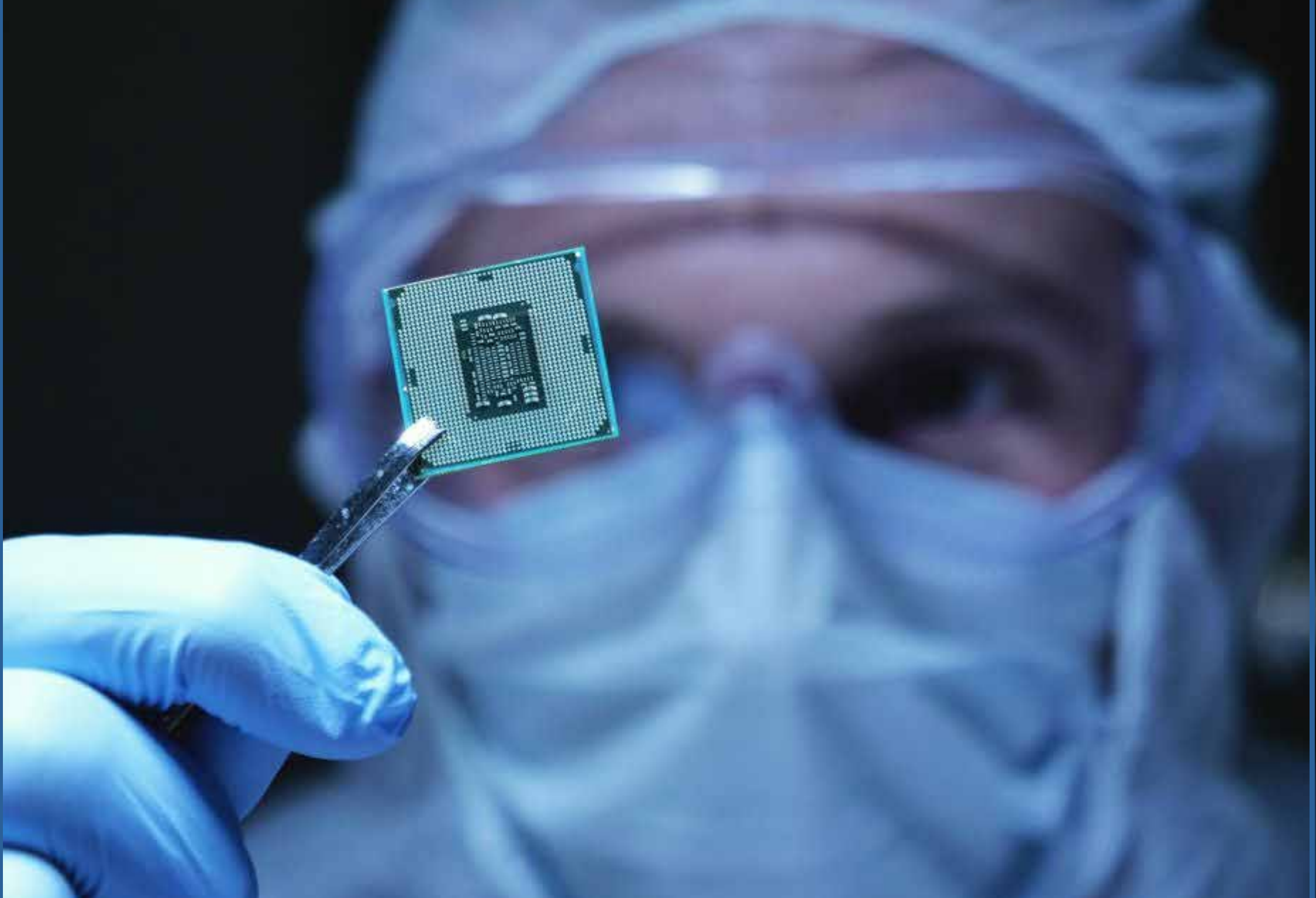
DEPARTMENT OF BIOMEDICAL ENGINEERING

BS Biomedical Engineering

BS Biomedical Engineering is a multi-disciplinary bachelor degree program which is recently approved by Pakistan Engineering Council (PEC) after their initial visit in addition to approval granted by honorable Governor Punjab being the Chancellor of the University. BS biomedical engineering program at HITEC University aims to bridge the gap between engineering and medical sciences. It aims to improve the present health care system ranging from diagnosis tools, patient monitoring to therapeutic plans and drug design. The major aim of this program is therefore to impart appropriate engineering knowledge to students thereby enabling them to skillfully tackle any problem related to health care.

The curriculum is in line with the requirements of PEC and is comprehensive enough to meet all challenges and requirements of the field of biomedical engineering both locally and globally. The program is intended to train the students to take up any role in a variety of fields including industry, government, academia, hospitals and R&D organizations. It includes areas of studies such as Electronics and Instrumentation, Signal Processing and Control, Biomedical Physics and Bioinformatics, Biomaterials, Physiology, Biochemistry and Anatomy. The biomedical engineering program spans over eight semesters (four years) and the degree of BS Biomedical Engineering is conferred upon students after demonstrating satisfactory performance in the allocated 138 credit hours in addition to completion of hospital/industry internship.

Currently all the engineering core courses and labs are taught and conducted at HITEC University main building, while courses and labs of the medical sciences track HITEC Institute of Medical Sciences. Students would be also facilitated to visit HIT hospital to acquire acquaintance of medical tools and equipment. The students would be encouraged to avail library facilities existing at both institutes.

Faculty

Dr. Nizamuddin (HEC Approved Supervisor)
Designation: Assistant Professor/ Chairperson Biomedical Engineering Department
Qualification: PhD Electrical Engineering, King Saud University, Riyadh, Saudi Arabia
Areas of Interest: Hyperthermia Treatment of Cancer, Application of RF and Microwave in Medicine and Food processing, HIFU systems
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Engr. Ayesha Naeem
Designation: Lecturer
Qualification: MS (Biomedical Engineering), Riphah International University, Islamabad
Areas of Interest: Biomedical Engineering, Bio-instrumentation
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Engr. Rohmma Latif
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Areas of Interest: Biomedical Instrumentation, Medical Image Processing
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Engr. Mehwish Bibi
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Riffat Kalsoom
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Adeela Mushtaq
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Areas of Interest: Databases
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Engr. Muhammad Ahtasham Abid
Designation: Lecturer
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Dr. Anum Khalid
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Qualification: MBBS
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Professor Dr. Asma Hafeez
Designation: Head of Anatomy Department, HITEC-IMS
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Dr. Zubia Razzaq
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Qualification: MBBS, FCPS, ADV.DIP HPE
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Dr. Aneeqa Shahid
Designation: Professor of Physiology at HITEC-IMS
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Areas of Interest: Neuromuscular Physiology
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Scheme of Study

Semester-1

Code	Course Title	Cr. Hr.
BS-105	Applied Physics	2+1
EC-110	Computing Fundamentals	2+1
EE-220	Fundamentals of Electrical Engineering	3+0
EE-220L	Fundamentals of Electrical Engineering Lab	0+1
BS-100	Basic Biology	2+0
MT-100	Basic Mathematics	2+0
BM-101	Introduction to Biomedical Engineering	1+0
HS-102	Pakistan Studies	2+0
QT-101	Translation of the Quran: Beliefs	1+0 (NC)
	Total Credit Hours	**15**

Semester-2

Code	Course Title	Cr. Hr.
IS-211	Islamic Studies	2+0
MT-101	Calculus and Analytic Geometry	3+0
BM-112	Physiology I	2+0
BM-112L	Physiology I Lab	0+1
EE-103	Electrical Network Analysis	3+0
EE-103L	Electrical Network Analysis Lab	0+1
EC-112	Object Oriented Programming	2+1
BM-113	Human Anatomy	2+0
BM-113L	Human Anatomy Lab	0+1
	Total Credit Hours	**18**

Semester-3

Code	Course Title	Cr. Hr.
MT-201	Complex Variables & Transforms	3+0
BM-211	Physiology II	2+0
BM-211L	Physiology II Lab	0+1
BM-202	Biochemistry	2+0
BM-202L	Biochemistry Lab	0+1
EE-200	Basic Electronics	3+0
EE-200L	Basic Electronics Lab	0+1
ME-211	Engineering Drawing	0+1
HS-103	Communication Skills	3+0
QT-201	Translation of the Quran: Worships	1+0 (NC)
	Total Credit Hours	**17**

Semester-4

Code	Course Title	Cr. Hr.
MT-205	Linear Algebra & Differential Equation	3+0
BM-213	Biomedical Electronics	3+0
BM-213L	Biomedical Electronics Lab	0+1
EE-203	Digital Logic Design	3+0
EE-203L	Digital Logic Design Lab	0+1
BM-214	Biomechanics	3+0
BM-214L	Biomechanics Lab	0+1
EE-206	Signals and Systems	3+0
EE-206L	Signals and Systems Lab	0+1
	Total Credit Hours	**19**

Semester-5

Code	Course Title	Cr. Hr.
BM-311	Biomedical Instrumentation I	3+0
BM-311L	Biomedical Instrumentation I Lab	0+1
MT-302	Probability and Statistics	3+0
HS-201	Technical Report Writing	3+0
EE-300	Introduction to Microprocessor and Interfacing Techniques	2+0
EE-300L	Introduction to Microprocessor and Interfacing Techniques Lab	0+1
BM-312	Biomedical Signal Processing	3+0
BM-312L	Biomedical Signal Processing Lab	0+1
QT-301	Translation of the Quran: Moral Values	1+0 (NC)
	Total Credit Hours	**17**

Semester-6

Code	Course Title	Cr. Hr.
MT-202	Numerical Methods	2+1
BM-313	Biomedical Instrumentation II	3+0
BM-313L	Biomedical Instrumentation II Lab	0+1
BM-314	Biomedical Control Systems	3+0
BM-314L	Biomedical Control Systems Lab	0+1
BM-XXX	Elective-I	3+0
BM-315	Biomaterials	3+0
BM-315L	Biomaterials Lab	0+1
HS-203	Community Service	0+1 (NC)
	Total Credit Hours	**18**

Semester-7

Code	Course Title	Cr. Hr.
HS-401	Professional Values & Ethics	2+0
HS-403	Management and Entrepreneurship	3+0
BM-411	Medical Imaging	2+0
BM-411L	Medical Imaging Lab	0+1
BM-XXX	Elective-II	3+0
BM-XXX	Elective-III	3+0
BM-401	Project Part-I	0+3
QT-401	Translation of the Quran: Dealings and Commandments	1+0 (NC)
	Total Credit Hours	**17**

Semester-8

Code	Course Title	Cr. Hr.
HS-404	Foreign Language	1+1
BM-XXX	Elective-IV	3+0
BM-400	Modeling & Simulation	2+1
BM-XXX	Elective-V	3+0
BM-401	Project Part-II	0+3
HS-402	Economics	2+0
ME-407	Health Safety and Environment	1+0
	Total Credit Hours	**17**

*Non Credited Course (NC)

Elective Courses: Offered according to the availability of resources in the respective educational institution.

Track 1
Tissue Engineering and Molecular Bioengineering

Code	Course Title	Cr. Hr.
BM-420	Biophysics	3+0
BM-421	Biofluid Mechanics & Bioheat Transfer	3+0
BM-422	Tissue Engineering	3+0
BM-423	Genetic Engineering	3+0
BM-424	Nano Biotechnology	3+0
BM-425	DNA Computing	3+0
BM-426	Regenerative Medicine	3+0
BM-427	Drug Delivery Systems	3+0
BM-428	Neuroscience	3+0

Track 2
Biomedical Computing

Code	Course Title	Cr. Hr.
BM-430	Bioinformatics	3+0
BM-431	Computational Fluid Dynamics	3+0
BM-432	Medical Data System	3+0
BM-433	Artificial Intelligence	3+0
BM-434	Telemedicine Systems	3+0
BM-435	Medical Image Processing	3+0
BM-436	Hospital Information System	3+0

Track 3
Instrumentation

Code	Course Title	Cr. Hr.
BM-440	Biomedical Engineering Systems	3+0
BM-441	Medical Device Quality and Standards	3+0
BM-442	Medical Device Regularity Affairs	3+0
BM-443	Medical Robotics	3+0
BM-444	Rehabilitation Engineering	3+0
BM-445	Power Electronics	3+0
BM-446	Bioelectricity	3+0

Internship: A Hospital/Industry Internship after the completion of 6th Semester should be made mandatory during summer as part of the degree requirements.

DEPARTMENT OF COMPUTER ENGINEERING

Dr. Imran Ashraf
Chairperson

The Department of Computer Engineering (DCE) was established in 2014 with the objective to furnish students with state-of-the-art quality education and prepare them for a rewarding future. The Department focuses on the practical and technical skills of the students which can be effectively used to meet their responsibilities towards industry, society and humanity. The department has experienced, dedicated, and foreign qualified faculty for its undergraduate and postgraduate programs. The curriculum of each program meets the criteria set by the Higher Education Commission of Pakistan and Pakistan Engineering Council (PEC) influenced by industrial perspectives. DCE emphasizes Outcome-Based Education (OBE) principles laid down by the Washington Accord and has been accredited by PEC. The department has several computer laboratories with state-of-the-art and updated equipment to fulfill the academic, research, and development requirements. The teaching and technical staff of the department support each student to explore his/her interest and capabilities.

The Bachelor of Science in Computer Engineering (BSCE) program has been designed to prepare computer engineers, fully capable of effectively applying emerging computer engineering knowledge to meet future challenges of the world. The students are trained to understand modern technologies, design concepts & methodologies, and develop products or processes by applying their professional knowledge of mathematics, computing, and engineering. Our graduates will play a pivotal role as a multi-disciplinary team member in the national and international market in connection with automation, design, research, and development.

The postgraduate program aims to enhance computer engineering knowledge and motivate students towards the latest academic research of computer engineering. The Department is offering MS in Computer Engineering with effect from fall 2018 keeping in view ever-increasing demands of the industry, availability of the foreign qualified faculty, and the supporting facilities and resources. The curriculum has been designed to cover advanced technologies and cutting-edge computer engineering areas to make it more attractive for the students.

DCE emphasizes on social responsibilities of students through community service and encourages students for extra-curricular activities within and outside of HITEC university premises for personality building. Our undergraduate and postgraduate students secure a bright future due to the high standards set by the department. We look forward to seeing you in our department where you can study to build an exciting career in one of the most promising academic programs of this era.

Faculty

Dr. Imran Ashraf (HEC Approved Supervisor)
Designation: Assistant Professor
Qualification: PhD, TU Delft, The Netherlands.
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Dr. Raza Ali Shah (HEC Approved Supervisor)
Designation: Assistant Professor
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Mr. Tehseen Ahsan
Designation: Assistant Professor
Qualification: MS, University of Surrey, Surrey, UK. PhD (in progress)
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Mr. Tauqeer Anjum
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Ms. Kaynat Rana

Designation: Lab Engineer
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Ms. Bushra Fiaz

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Mr. Ali Raza

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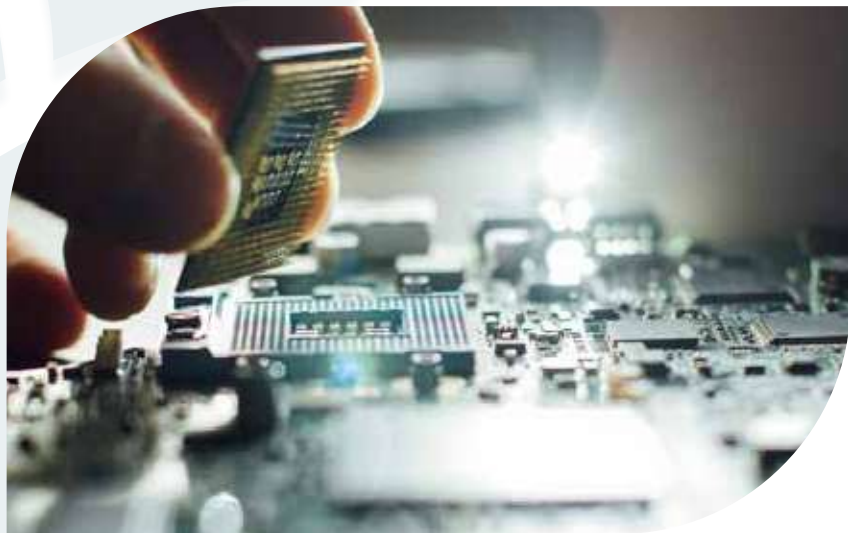
BS Computer Engineering

The Bachelor of Science Computer Engineering (BSCE) program has been designed to produce quality computer engineers for taking competitive jobs in the national and international market relating to the field of computer engineering. This program focuses on the integration of concepts of software and hardware knowledge for the design, development, and operation of real-time computer systems. In the present era, sophisticated computer-based systems permeate all spheres of life and are being actively used in a wide variety of engineering disciplines and technologies. The BSCE discipline covers modern applications covering electronics, logic design, computer architecture, algorithmics, programming, signals & systems, communication networks, microprocessors & interfacing, communication systems, digital system design, embedded systems, parallel and distributed computing, communications systems, digital signal processing, digital image processing, etc. The BSCE curriculum meets the requirements of the Pakistan Engineering Council (PEC) and Higher Education Commission (HEC) of Pakistan.

The duration of the program is 4 years (8 semesters) and consists of courses from a wide range of topics that are taught at the foundation, breadth, and depth level of computer engineering. The foundation courses provide basic concepts to the students to understand the fundamentals of computer engineering. The breadth level courses give exposure to several important areas closely related to the field of computer engineering and the depth level courses offer advanced topics and contain a substantial design component. In the last two semesters, every student is required to take a six-credit hours' final year project

that involves the design, testing, analysis, and implementation of a prototype system, which covers both hardware and software. To thoroughly understand design concepts about the field of computer engineering, a number of mathematics courses have also been included in the curriculum. We strongly believe that the in-depth knowledge of computer engineering and allied disciplines is extremely useful for our students in order to find right solutions for complex engineering problems. In this context, our program consists of a realistic proportion of computer and electrical engineering courses that make a solid foundation for the design and implementation of efficient and effective automated computer systems for their optimized performance. The semester-wise breakdown of the BS Computer Engineering curriculum is appended as follows: -

Scheme of Study

Semester-1

Code	Course Title	Cr. Hr.
BS-101	Engineering Physics	3+0
HS-101	English	3+0
MT-101	Calculus & Analytic Geometry	3+0
EE-102	Electric Circuit Analysis	3+1
HS-102	Pakistan Studies	2+0
EC-110	Computing Fundamentals	2+1
QT-101	Translation of the Quran: Beliefs	*1+0
	Total Credit Hours	**18**

Semester-2

Code	Course Title	Cr. Hr.
EE-101	Engineering Workshop	0+1
HS-103	Communication Skills	3+0
EC-111	Programming Fundamentals	3+1
EE-205	Electronic Devices and Circuits	3+1
EC-225	Discrete Structures	3+0
MT-303	Applied Linear Algebra	2+0
	Total Credit Hours	**17**

Semester-3

Code	Course Title	Cr. Hr.
MT-103	Differential Equations	3+0
EC-121	Digital Logic Design	3+1
HS-201	Technical Report Writing	3+0
HS-203	Community Service	0+1*
IS-211	Islamic Studies	2+0
ME-211	Computer Aided Engineering Design	0+1
EC-230	Object Oriented Programming	3+1
QT-201	Translation of the Quran : Worships	*1+0
	Total Credit Hours	**17**

Semester-4

Code	Course Title	Cr. Hr.
MT-201	Complex Variables and Transforms	3+0
EC-201	Engineering Project Management	3+0
EC-222	Data Structures & Algorithms	3+1
EC-223	Signals and Systems	3+1
EC-228	Computer Architecture and Organization	3+1
	Total Credit Hours	**18**

Semester-5

Code	Course Title	Cr. Hr.
MT-202	Numerical Methods	2+1
CS-204	Software Engineering	3+0
EC-332	Computer Communication Networks	3+1
EC-333	Microprocessor and Interfacing Techniques	3+1
EC-334	Database Systems	3+1
QT-301	Translation of the Quran: Moral Values	*1+0
	Total Credit Hours	**18**

Semester-6

Code	Course Title	Cr. Hr.
MT-302	Probability and Statistics	3+0
EC-231	Operating Systems	3+1
EC-341	Digital System Design	3+1
EC-390	Digital Signal Processing	3+1
xx-xxx	EC Depth Elective - I	2+1
	Total Credit Hours	**18**

Semester-7

Code	Course Title	Cr. Hr.
HS-401	Professional Values & Ethics	2+0
HS-403	Management and Entrepreneurship	3+0
HS-404	Foreign Language	1+1
xx-xxx	EC Depth Elective - II	2+1
xx-xxx	IDEE - I	2+1
EC-499	Final Year Project - I	0+3
QT-401	Translation of the Quran: Dealing and Commandments	*1+0
	Total Credit Hours	**16**

Total Credit Hours = 137

Semester-8

Code	Course Title	Cr. Hr.
HS-402	Economics	2+0
ME-407	Health Safety and Environment	1+0
xx-xxx	EC Depth Elective - III	2+1
xx-xxx	EC Depth Elective - IV	2+1
xx-xxx	IDEE - II	2+1
EC-499	Final Year Project - II	0+3
	Total Credit Hours	**15**

*Non Credited Course (NC)

Elective Courses

Code	Course Title	Cr. Hr.
EC-350	Control Engineering	3+0
EC-442	Embedded Systems	2+1
EC-444	Parallel and Distributed Computing	2+1
EC-445	System Programming	2+1
EC-448	Introduction to Robotics	2+1
EC-465	Software Project Management	2+1
EC-467	Mobile Application Development	2+1
CS-305	Computer Graphics	2+1
EC-481	Wireless and Mobile Networks	3+0
EC-482	Network Security and Cryptography	3+0
EC-483	Fault Tolerant Computing	3+0

Inter- Disciplinary Engineering Elective

Code	Course Title	Cr. Hr.
CS-302	Artificial Intelligence	2+1
CS-308	Software Quality Assurance	3+0
CS-309	Web Application Engineering	2+1
CS-406	Digital Image Processing	2+1
CS-407	Fundamentals of Data Mining	2+1
EE-304	Communication Systems	3+0

MS Computer Engineering

The Department of Computer Engineering offers the Master of Science degree in Computer Engineering (MSCE). The MSCE program is designed to prepare students for technically demanding careers in industry as well as for higher studies in computer engineering. It involves knowledge of hardware and software development. The students learn how to design new generations of computers and embedded computing systems such as those found in smartphones, cars, appliances, computer networks, smart factories, and the internet-of-things. The program covers the entire digital integrated circuit design process targeting Field Programmable Gate Arrays (FPGAs) and Application Specific Integrated Circuits (ASICs) using various optimization criteria such as speed, cost, power, energy, reliability, and security. It also encompasses the complete software development process targeting microcontrollers, multi-core microprocessors, and Graphics Processing Units (GPUs). It teaches students how to efficiently partition the system into software and hardware components, and develop high performance interfaces between these two parts. It exposes students to modern computer-aided design tools for hardware and software design. To fulfill the MS degree requirements, a student needs to complete 30 credit hours. Thesis and Non-thesis options are available to the students. The thesis option requires 8 courses of 24 credit hours and 6 credit hours of thesis whereas for the non-thesis option, a student is required to take 10 courses of 30 credit hours besides writing a technical report on the given topic. The curriculum is given as follows: -

Scheme of Study

Semester-1

Code	Course Title	Cr. Hr.
EC-xxx	Core – I	3+0
EC-xxx	Core – II	3+0
xx-xxx	Elective – I	3+0
	Total Credit Hours	**9**

Semester-2

Code	Course Title	Cr. Hr.
EC-xxx	Core – III	3+0
EC-xxx	Specialization Elective – I	3+0
xx-xxx	Elective – II	3+0
	Total Credit Hours	**9**

Semester-3

Code	Course Title	Cr. Hr.
EC-xxx	Specialization Elective – II	3+0
xx-xxx	Elective – III	3+0
EC-899	Thesis	3+0
	Total Credit Hours	**9**

Semester-4

Code	Course Title	Cr. Hr.
EC-899	Thesis	3+0
	Total Credit Hours	**3**

Total Credit Hours = 30

Core Courses

The candidate has to complete a minimum of three core courses from the following list. The department may offer core/elective courses from the given list, but not limited to this list, as per the availability of resources.

Code	Course Title	Cr. Hr.
EC-801	Advanced Computer Architecture	3+0
EC-802	Advanced Digital Systems Design	3+0
EC-803	VLSI Architecture and Design Methodologies	3+0
EC-821	Advanced Embedded Systems	3+0
EC-831	Advanced Digital Signal Processing	3+0
EC-899	Thesis	6+0

Specialization Courses

The candidate has to select a minimum of two (2) from specialization electives and three (3) courses from general electives

Code	Course Title	Cr. Hr.
EC-804	Advanced Microprocessor and Microcontroller Design	3+0
EC-805	Microcontroller System Design and Applications	3+0
EC-806	System on Chip Design	3+0
EC-807	HW/SW Co-Design	3+0
EC-808	FPGA Based Systems	3+0
EC-809	DSP Integrated Circuits	3+0
EC-810	Advanced FPGA Design	3+0
EC-811	Parallel Processing Architecture	3+0
EC-812	RISC Processor Architecture and Programming	3+0
EC-813	High Performance Programming with Multicore and GPUs	3+0
EC-822	Embedded Communication Software Design	3+0
EC-823	Architecture and Design of Distributed Embedded Systems	3+0
EC-824	Software Modeling for Embedded Systems	3+0

Code	Course Title	Cr. Hr.
EC-825	Embedded Control Systems	3+0
EC-826	Application of MEMS Technology	3+0
EC-829	Real Time Operating Systems	3+0
EC-851	Soft Computing	3+0
CS-878	Intelligent Systems	3+0
EC-853	Pattern Recognition & Analysis	3+0
EC-854	Neural and Fuzzy Systems	3+0
CS-823	Machine Learning	3+0
CS-824	Artificial Neural Networks	3+0
EC-872	Data Communication & Networks	3+0
EC-876	Embedded Wireless Sensor Networks	3+0
EC-877	Embedded Networking	3+0
EC-878	Adhoc Networks	3+0
EC-879	Distributed Embedded Computing	3+0
CS-811	Advanced Computer Networks	3+0
CS-815	Cryptography & Network Security	3+0
CS-844	Information Security	3+0
CS-859	Mobile and Pervasive Computing	3+0

General Electives Courses

Code	Course Title	Cr. Hr.
CS-802	Advanced Algorithms Analysis	3+0
CS-814	Multimedia Communication	3+0
CS-819	Information Theory & Coding	3+0
CS-822	Advanced Digital Image Processing	3+0
CS-827	Advanced Pattern Recognition	3+0
EC-832	Advanced Digital Image Processing and Applications	3+0
CS-829	Advanced Computer Vision	3+0
EC-842	Wireless and Mobile Communication	3+0
EE-844	Research Methodologies (Compulsory)	3+0
CS-857	Parallel & Distributed Systems	3+0

Code	Course Title	Cr. Hr.
EC-861	Advanced Operating Systems	3+0
CS-879	Multimedia Systems and Applications	3+0
EC-890	Robotics and Control	3+0
EC-891	Pervasive Devices and Technology	3+0
EC-892	Real Time Systems	3+0
EC-893	Applied Mathematics for Engineers	3+0
EE-813	Real Time DSP Design and Application	3+0
EE-817	Statistical Signal Processing	3+0
EE-819	Array Signal Processing	3+0
EE-823	Advanced Digital Communication	3+0
EE-828	Smart Antennas	3+0
CS-831	Advanced Database Management Systems	3+0
CS-832	Data Mining	3+0
CS-833	Data Warehousing	3+0
CS-834	Web Engineering	3+0
CS-835	Advanced Web Analytics	3+0
CS-836	Semantic Web	3+0
CS-841	Advanced Software Engineering	3+0
CS-843	Software Quality Assurance	3+0
CS-880	Mobile Communication Systems	3+0
CS-883	Advanced Cloud Computing	3+0
CS-885	High Performance Computing	3+0
CS-920	Selected Topics in Digital Image Processing	3+0

PhD Computer Engineering

PhD (Doctor of Philosophy) in Computer Engineering is an esteemed 3-year Doctorate Computer Engineering course based on new technological advancements and innovation. It will increase the student's ability to succeed in industry, academia and community institutions. This program will prepare students to become skillful academicians, researchers, industrialists to pursue their careers. The program is designed as per HEC's latest 2021 guidelines having a strong inclination towards a research-oriented learning approach. This strategy pushes students to drill and explore the new research trends and hence acts as a driving force for them to conduct quality research. Within the scope of general requirements, students may opt to suit their research interests based on their educational backgrounds. Experienced researchers and highly qualified faculty members working in multiple research domains are available to guide the students. Research groups are working in different fields of computer engineering including Field Programmable Gate Arrays (FPGAs) and Application Specific Integrated Circuits (ASICs) using various optimization criteria such as speed, cost, power, energy, reliability and security. It also encompasses the complete software development process targeting microcontrollers, microprocessors, multi-core and Graphics Processing Units (GPUs). The student can select courses from the list of available graduate courses after consultation with the respective Ph.D. supervisor. Moreover, it is also mandatory for the students to clear the qualifying examination before perusing the research work of the doctoral thesis in the desired area. The computer engineering Ph.D. program prepares the graduate to apply computer engineering knowledge and technique to solve a broad spectrum of engineering problems while researching the design and analysis

of computer hardware and software; digital and electronics; and wireless communication systems.

Students will need a Bachelor's and a Master's degree to pursue the PhD Program. The Program comprises of 24 credit hours of course work followed by 30 credit hours of research work.

PhD Courses

Code	Course Title	Cr. Hr.
EC-801	Advanced Computer Architecture	3+0
EC-802	Advanced Digital Systems Design	3+0
EC-803	VLSI Architecture and Design Methodologies	3+0
EC-804	Advanced Microprocessor and Microcontroller Design	3+0
EC-805	Microcontroller System Design and Applications	3+0
EC-806	System on Chip Design	3+0
EC-807	HW/SW Co-Design	3+0
EC-808	FPGA Based Systems	3+0
EC-809	DSP Integrated Circuits	3+0
EC-810	Advanced FPGA Design	3+0
EC-811	Parallel Processing Architecture	3+0
EC-812	RISC Processor Architecture and Programming	3+0
EC-813	High Performance Programming with Multicore and GPUs	3+0
EC-814	Quantum Computing	3+0
EC-821	Advanced Embedded Systems	3+0
EC-822	Embedded Communication Software Design	3+0
EC-823	Architecture and Design of Distributed Embedded Systems	3+0
EC-824	Software Modeling for Embedded Systems	3+0

Code	Course Title	Cr. Hr.
EC-825	Embedded Control Systems	3+0
EC-826	Application of MEMS Technology	3+0
EC-829	Real Time Operating Systems	3+0
EC-831	Advanced Digital Signal Processing	3+0
EC-832	Advanced Digital Image Processing and Applications	3+0
EC-842	Wireless and Mobile Communication	3+0
EC-851	Soft Computing	3+0
EC-853	Pattern Recognition and Analysis	3+0
EC-854	Neural and Fuzzy Systems	3+0
EC-861	Advanced Operating Systems	3+0
EC-955	Advance Pattern Recognition	3+0
EC-871	Mobile Communication Systems	3+0
EC-872	Data Communication and Networks	3+0
EC-873	Multimedia Communication	3+0
EC-874	Information Theory and Coding	3+0
EC-876	Embedded Wireless Sensor Networks	3+0
EC-877	Embedded Networking	3+0
EC-878	Adhoc Networks	3+0
EC-879	Distributed Embedded Computing	3+0
EC-880	Advance Cloud Computing	3+0
EC-882	Distributed Database Systems	3+0
EC-884	Advanced Fault Tolerant Computing	3+0
EC-890	Robotics and Control	3+0
EC-891	Pervasive Devices and Technology	3+0
EC-892	Real Time Systems	3+0
EC-893	Applied Mathematics for Engineers	3+0
EC-920	Advance Systems Programming	3+0
EC-921	Advanced Multimedia Communication	3+0
EC-922	Advanced Human-Computer Interaction	3+0
EC-930	Selected topics in Digital Image Processing	3+0
EC-935	Big Data Analysis	3+0
EC-950	Advanced Neural Networks and Fuzzy logic	3+0
EC-951	Advanced Deep Learning	3+0

Code	Course Title	Cr. Hr.	Code	Course Title	Cr. Hr.
EC-953	Advanced Distributed Data Processing	3+0	CS-833	Data Warehousing	3+0
EC-954	Advanced Machine Learning	3+0	CS-834	Web Engineering	3+0
EC-960	Advanced Algorithm Analysis	3+0	CS-835	Advanced Web Analytics	3+0
EC-961	Advanced Formal Methods	3+0	CS-836	Semantic Web	3+0
EC-970	Advanced Tops in Computer networks	3+0	CS-841	Advanced Software Engineering	3+0
EC-971	Advanced Topics in Applied Cryptography	3+0	CS-843	Software Quality Assurance	3+0
EC-990	Advance Robotics systems	3+0	CS-857	Parallel Distributed systems	3+0
CS-811	Advanced Computer Networks	3+0	EE-844	Research Methodology	3+0
CS-815	Cryptography and Network Security	3+0	CS-859	Mobile and Pervasive Computing	3+0
CS-823	Machine Learning	3+0	CS-878	Intelligent Systems	3+0
CS-824	Artificial Neural Networks	3+0	EE-817	Statistical Signal Processing	3+0
CS-831	Advanced Database Management Systems	3+0	EE-819	Array Signal Processing	3+0
CS-832	Data Mining	3+0	EE-823	Advanced Digital Communication	3+0
			CS-844	Information Security	3+0

BS INTERNET OF THINGS (IOT)

BS Internet of things (IOT)

BS IoT program will enable a student to become technological expert who can manage, program, maintain and secure IoT devices in many critical areas such as energy, transportation, health, aviation, infrastructure and hospitality and many more. Our BS program will provide expertise in major areas of IoT such as hardware, software, wireless communications, cybersecurity & privacy and Logistics.

Scheme of Study

Semester-1

Code	Course Title	Cr. Hr.
BS-105	Applied Physics	2+1
HS-101	English	3+0
MT-101	Calculus & Analytical Geometry	3+0
EE-102	Electric Circuit Analysis	3+1
HS-102	Pakistan Studies	2+0
IOT-101	Fundamentals of IOT	3+0
QT-101	Translation of Quran: Beliefs	1+0(NC)
	Total Credit Hours	**18**

Semester-2

Code	Course Title	Cr. Hr.
IOT-102	Introduction to Information and Communication Technologies	2+0
EC-111	Programming Fundamentals	3+1
EE-205	Electronic Devices and Circuits	3+1
EE-121	Digital Logic Design	3+1
MT-303	Applied Linear Algebra	2+0
	Total Credit Hours	**16**

Semester-3

Code	Course Title	Cr. Hr.
MT-103	Differential Equations	3+0
EC-231	Operating Systems	3+1
IOT-201	IoT Communication	3+1
HS-203	Community Service	1+0 (NC)
HS-103	Communication Skills	3+0
EC-230	Object Oriented Programming	3+1
QT-201	Translation of Quran: Worship	1+0 (NC)
	Total Credit Hours	**18**

Semester-4

Code	Course Title	Cr. Hr.
MT-201	Complex Variables and Transforms	3+0
EC-223	Signals and Systems	3+1
EC-222	Data Structures and Algorithms	3+1
EC-228	Computer Architecture and Organization	3+1
IOT-202	IoT Applications	2+1
	Total Credit Hours	**18**

Semester-5

Code	Course Title	Cr. Hr.
xx-xxx	IoT Elective-1	3+0
EC-390	Digital Signal Processing	3+1
HS-201	Technical Report Writing	3+0
EC-341	Digital System Design	3+1
EE-334	Database Systems	3+1
QT-301	Translation of Quran: Moral Values	1+0(NC)
	Total Credit Hours	**18**

Semester-6

Code	Course Title	Cr. Hr.
MT-302	Probability and Statistics	3+0
CS-204	Software Engineering	3+0
EC-442	Embedded Systems	2+1
xx-xxx	IoT Elective-2	3+0
xx-xxx	IoT Elective-3	3+0
xx-xxx	IoT Elective-4	2+1
	Total Credit Hours	**18**

Semester-7

Code	Course Title	Cr. Hr.
HS-401	Professional Values and Ethics	2+0
SE-401	Software Project Management	3+0
xx-xxx	IoT Elective-5	2+1
xx-xxx	IoT Elective-6	3+1
EC-499	Final Year Project-I	0+3
QT-401	Translation of Quran: Dealing and Commandments	1+0 (NC)
	Total Credit Hours	**15**

Semester-8

Code	Course Title	Cr. Hr.
IS-211	Islamic Studies	2+0
ME-407	Health Safety and Environment	1+0
xx-xxx	IoT Elective-7	2+1
xx-xxx	IoT Elective-8	2+1
xx-xxx	IoT Elective-9	2+1
EC-499	Final Year Project II	0+3
	Total Credit Hours	**15**

Total Credit Hours = 136

Elective Courses

Code	Course Title
CS-407	Fundamentals Of Cybersecurity
IOT-302	Data Analysis for IoT
IOT-441	Introduction to Human Computer Interaction
IOT-412	Telecommunications Networks
IOT-333	Edge Computing
IOT-421	Embedded Operating Systems
IOT-332	Introduction to Security of Internet of Things and Cyber-Physical Systems
IOT-331	Cloud Computing for IoTs
IOT-341	Introduction to Circuits & Electronic Hardware
IOT-351	Introduction to Computer Design
IOT-401	Microcontrollers for IoT Devices
IOT-403	Introduction to Wireless Communications for IoT
IOT-402	Sensors for IoT

Elective Courses

Code	Course Title
IOT-411	Network Protocols for IoT
IOT-312	Industrial IoT
IOT-321	IoT boards Programming
IOT-311	Smart IoT Devices
IOT-301	Machine Learning for IoT
IOT-412	Machine to Machine and IoT interface for embedded systems
CS-407	Data Mining
EC-444	Parallel and Distributed Computing
CS-433	Deep Learning and Applications
CS-311	Data Warehousing
IOT-413	Wireless Networks for IoTs
IOT-431	Neural Networks for IoTs

Dr. Junaid Ali Khan
Dean Sciences / Chairperson

The Department of Computer Science and Engineering was established in Spring 2014 and is re-designated as Department of Computer Science (DCS) on the instructions of Punjab Higher Education Commission Pakistan in July 2019. The Department aims to impart quality education to its students. The Department not only emphasizes on technical and practical skills of the students but also endeavors to enhance their sense of responsibility towards humanity. The Department has employed highly qualified, most experienced, research-focused and professionally sound faculty for its different academic programs. Dedicated, spacious and well-equipped laboratories have been established for providing state-of-the-art research, development, teaching and learning facilities. The curriculum of each program meets requirements of the industry and is in-line with the criteria set by Higher Education Commission of Pakistan and National Computing Education Accreditation Council.

The Bachelor of Science in Computer Science (BS CS)

program has been designed to produce professionals having sound computing knowledge, complex problem-solving capabilities, critical thinking towards problem design and analysis. The curriculum of BS CS broadly covers the four streams of computer science like computing, artificial intelligence, data science and information security. The curriculum and the laboratory work has been designed and integrated in such a way that our graduates get edge over their competitors for securing better positions in the industry, academia and research within the country and abroad. After completing the BSCS program, our students will have a thorough understanding of the latest computing tools, theoretical and practical aspects of the subject area.

Software Engineering is the application of a systematic, disciplined and quantifiable approach to the design, development, operation, and maintenance of software systems. The Bachelor of Science in Software Engineering (BS SE) program has been designed to prepare software engineers, fully capable of effectively applying emerging software engineering knowledge to meet future challenges of the world. It is in fact the practice of designing and implementing large, reliable, efficient and economical software by applying the principles and practices of engineering. The department aims to train students in all aspects of software life cycle from specification through analysis and design to testing, maintenance and evolution of software product. Our graduates will play pivotal role as a multi-disciplinary team member in the national and international market in connection with automation, design, research and development.

In Fall 2014, the Department started MS Computer Science with the aim to broaden the knowledge of computing and bridge the gap between graduate level knowledge and the cutting-edge research

methodologies and technologies. The MS program is designed to enable students to learn advanced knowledge in the domain of computer science by taking specialized courses to enhance their expertise in the latest areas. The Department also aims to launch MS Software Engineering from Fall 2021.

In Spring 2019, the DCS has also started PhD in Computer Science. It is a full-time study program to facilitate the students to engage themselves in the advanced study and research. PhD scholars will be capable of integrating their professional education and experience to solve practical complex problems through innovative approaches.

Besides academics, we also focus on personality development and character building of our students by facilitating them to get involved in extracurricular activities within and outside the HITEC University. We strongly hope that our students will become innovators and leaders with regards to their contribution. I look forward to seeing you in my department where you can study to build an exciting career in one of the most promising academic programs of this era.

Faculty

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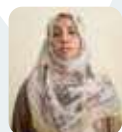
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BS Computer Science

The BS Computer Science program at HITEC University endeavors to produce computer scientists and highly skilled programmers, who can play a productive role in software industry, research and the academia. The program comprises of eight semesters (four years) and covers essential courses in the field of computer science. Additional elective courses are also offered to develop in-depth knowledge in the specialized areas. During the last two semesters, every student is required to take six credit hours' final year project with the aim to undertake practical industrial problems by utilizing the knowledge and skills acquired during the course of study planned in different semesters of the program. The guidelines given by Higher Education Commission of Pakistan have been followed while preparing BSCS curriculum.

Besid es the foundation courses, core computer science courses such as distributed computing, computer programming, artificial intelligence, mobile application development, software engineering, digital image processing, software development, data mining, database systems etc., are also offered to provide required depth in the specialized areas. These specialized areas include four streams like computing, artificial intelligence, information security and data sciences. In addition, a number of courses from other disciplines are taught to bridge the gap. Courses related to social sciences, management and humanities are included in the curriculum for character-building and personality grooming of our students.

The BS Computer Science program is accredited by National Computing Education Accreditation Council (NCEAC). The laboratory work is supervised by the concerned faculty member and qualified lab instructor. The lab sessions are conducted in the well-established and spacious labs which house state-of-the-art equipment. Internet facility is available throughout the campus, twenty-four hours a day and seven days a week for the benefit of the students and faculty. Highly qualified and experienced full-time dedicated faculty members are available for quality teaching. These labs enable our students to develop skills which will help them secure jobs both nationally and internationally. The semester-wise breakdown of BS Computer Science curriculum is appended as follows: -

Scheme of Study

Semester-1

Code	Course Title	Cr. Hr.
CS-101	Introduction to Information and Communication Technologies	2+1
CS-102	Programming Fundamentals	3+1
CS-103	Discrete Structures	3+0
HS-101	English	3+0
IS-211	Islamic Studies	2+0
MT-101	Calculus and Analytic Geometry	3+0
	Total Credit Hours	**18**

Semester-2

Code	Course Title	Cr. Hr.
MT-203	Linear Algebra	3+0
HS-102	Pakistan Studies	2+0
HS-401	Professional Values and Ethics	2+0
CS-104	Object Oriented Programming	3+1
BS-105	Applied Physics	2+1
EC-121	Digital Logic Design	3+1
QT-101	Translation of the Quran: Beliefs	*1+0
	Total Credit Hours	**18**

Semester-3

Code	Course Title	Cr. Hr.
MT-103	Differential Equations	3+0
HS-403	Management and Entrepreneurship	3+0
CS-201	Data Structures and Algorithms	3+1
CS-204	Software Engineering	3+0
HS-402	Economics	2+0
HS-201	Technical Report Writing	3+0
HS-203	Community Service	0+1 (NC)
	Total Credit Hours	**16**

Semester-4

Code	Course Title	Cr. Hr.
CS-203	Design & Analysis of Algorithms	3+0
CS-206	Computer Organization and Assembly Language	3+1
MT-204	Multivariable Calculus	3+0
HS-302	International Relations	3+0
HS-103	Communication Skills	3+0
HS-404	Foreign Language	1+1
QT-201	Translation of the Quran: Worships	*1+0
	Total Credit Hours	**18**

Semester-5

Code	Course Title	Cr. Hr.
CS-301	Theory of Automata	3+0
CS-303	Operating Systems	3+1
CS-304	Database Systems	3+1
CS-XXX	Computer Science Elective – I	2+1
MT-302	Probability and Statistics	3+0
	Total Credit Hours	**17**

Semester-6

Code	Course Title	Cr. Hr.
CS-302	Artificial Intelligence	3+1
CS-306	Data Communication & Computer Networks	3+1
EC-444	Parallel and Distributed Computing	2+1
CS-XXX	Computer Science Elective – II	2+1
CS-308	Software Quality Assurance	3+0
QT-301	Translation of the Quran: Moral Values	*1+0
	Total Credit Hours	**17**

Semester-7

Code	Course Title	Cr. Hr.
CS-401	Compiler Construction	2+1
CS-XXX	Computer Science Elective – III	2+1
CS-XXX	Computer Science Elective – IV	3+0
CS-408	Human Computer Interaction	2+1
ME-407	Health Safety and Environment	1+0
CS-499	Final Year Project	0+3
	Total Credit Hours	**16**

Semester-8

Code	Course Title	Cr. Hr.
CS-402	Information Security	3+0
CS-405	Numerical Computing	2+1
CS-XXX	Computer Science Elective – V	3+0
CS-XXX	Computer Science Elective – VI	3+0
CS-499	Final Year Project	0+3
QT-401	Translation of the Quran: Dealing and Commandments	*1+0
*NC	**Total Credit Hours**	**15**

*Non Credited Course (NC)

Stream Electives

Elective Courses (Information Security)

Code	Course Title	Cr. Hr.
CS-310	Distributed Computing	3+0
CS-404	Data and Network Security	3+0
CS-406	Digital Image Processing	2+1
CS-419	Introduction to Optimization Techniques	3+0
CS-420	System Loss Prevention Methodologies	3+0
CS-421	Security Threats and Risk Assessment	3+0
CS-422	Information System Forensics & Investigation	2+1
CS-423	Network & Distributed Systems Security	3+0
CS-424	Introduction to Cryptography	2+1
CS-425	Wireless Network Security	2+1
CS-426	Computer Security	2+1
CS-427	Cyber Forensic Analysis	3+0

Elective Courses (Data Science)

Code	Course Title	Cr. Hr.
CS-305	Computer Graphics	2+1
CS-310	Distributed Computing	3+0
CS-311	Data Warehousing	3+0
CS-406	Digital Image Processing	2+1
CS-411	Computer Vision	3+0
CS-428	Introduction to Machine Learning	2+1
CS-429	Introduction to Data Science	2+1
CS-430	Data Science and Engineering	3+0
CS-431	Big Data Programming	2+1
CS-432	Introduction to Big Data Mining	3+0
CS-433	Deep Learning and Applications	2+1
CS-434	Data Visualization	2+1

Elective Courses (Artificial Intelligence)

Code	Course Title	Cr. Hr.
CS-305	Computer Graphics	2+1
CS-407	Fundamentals of Data Mining	3+0
CS-410	Artificial Neural Networks	2+1
CS-412	Expert Systems	3+0
CS-413	Fuzzy Logic Systems	2+1
CS-414	Computational Intelligence	3+0
CS-415	Multi Agent Systems	3+0
CS-416	Natural Language Processing	3+0
CS-417	Game Development	3+0
CS-419	Introduction to Optimization Techniques	3+0
CS-428	Introduction to Machine Learning	2+1
CS-433	Deep Learning and Applications	2+1

Elective Courses (Computing)

Code	Course Title	Cr. Hr.
CS-305	Computer Graphics	2+1
CS-309	Web Design and Development	2+1
CS-310	Distributed Computing	3+0
CS-312	Web Engineering	2+1
CS-313	Formal Methods in Software Engineering	3+0
CS-314	Social Computing	3+0
CS-403	Mobile Application & Development	3+0
CS-406	Digital Image Processing	2+1
CS-407	Fundamentals of Data Mining	3+0
CS-418	Logical Paradigm of Computing	3+0
CS-419	Introduction to Optimization Techniques	3+0
CS-428	Introduction to Machine Learning	2+1

MS Computer Science

The exponential growth in computing and technology has undoubtedly created a great demand for the professionals in the area of computer science. In order to fulfill qualified human resource for meeting demands of the IT industry, academia and software market, the Department of Computer Science (DCS) started its MS Computer Science (MSCS) program in Fall 2014. The vision of this program is to bridge the gap by producing qualified manpower for expansion and growth of software industry in Pakistan which will play a key role for the socio-economic uplift of the country. MSCS Program offers an opportunity for the computer professionals to grab jobs in the software industry, academia and research-oriented organizations in order to contribute in the areas of advanced analysis of algorithms, theory of computation, simulation & modeling, multimedia communication, cryptography and security, computer vision, machine learning, decision support systems, data mining, web engineering, software project management, software quality assurance, requirement engineering, operating systems, next generation networks, parallel & distributed computing, mobile and pervasive computing, computer networks, artificial Intelligence, Image processing, database systems, software engineering, and human computer interface etc. To fulfill the MS degree requirements, a student needs to complete 30 credit hours by taking 8 courses of 24 credit hours and 6 credit hours of thesis. The objective of thesis is to enable our students to select a problem, identify research questions, develop hypothesis, conduct experiments and furnish their findings. However, a student may opt for non-thesis option and in this case, he/she has to take 10 courses and a mandatory technical report. Curriculum has been designed in accordance with guidelines of the HEC. The courses can be selected from the list of courses offered in the semesters.

Core Courses

Code	Course Title	Cr. Hr.
CS-801	Advanced Theory of Computation	3+0
CS-802	Advanced Algorithm Analysis	3+0
EE-801	Advanced Computer Architecture	3+0
EC-861	Advanced Operating Systems	3+0

Elective Courses

Code	Course Title	Cr. Hr.
CS-811	Advanced Computer Networks	3+0
CS-812	Wireless Networks	3+0
CS-813	Network Simulation & Modeling	3+0
CS-814	Multimedia Communication	3+0
CS-815	Cryptography & Network Security	3+0
CS-822	Advanced Digital Image Processing	3+0
CS-823	Machine Learning	3+0
CS-824	Advanced Neural Networks	3+0
CS-825	Decision Support Systems	3+0
CS-829	Advanced Computer Vision	3+0
CS-831	Advanced Database Management Systems	3+0
CS-832	Data Mining	3+0
CS-833	Data Warehousing	3+0
CS-834	Web Engineering	3+0
CS-835	Advanced Web Analytics	3+0
CS-836	Semantic Web	3+0
CS-841	Advanced Software Engineering	3+0
CS-842	Advanced Software Project Management	3+0

Code	Course Title	Cr. Hr.
EC-842	Wireless and Mobile Communication	3+0
CS-843	Software Quality Assurance	3+0
CS-844	Information Security	3+0
CS-853	Next Generation Networks	3+0
EC-853	Pattern Recognition & Analysis	3+0
CS-854	Advanced Information Management Systems	3+0
EC-854	Neural and Fuzzy Systems	3+0
CS-855	Object Oriented Databases	3+0
CS-856	Software Architecture	3+0
CS-857	Parallel & Distributed Systems	3+0
CS-858	Research Methods	3+0
CS-859	Mobile & Pervasive Computing	3+0
CS-861	Operation Research	3+0
EC-872	Data Communication & Networks	3+0
EC-876	Embedded Wireless Sensor Networks	3+0
CS-877	Soft Computing	3+0
CS-878	Intelligent Systems	3+0
EC-878	Adhoc Networks	3+0
CS-879	Multimedia Systems and Applications	3+0
EC-879	Distributed Embedded Computing	3+0
CS-880	Mobile Communication Systems	3+0
CS-883	Advanced Cloud Computing	3+0
CS-885	High Performance Computing	3+0
EC-891	Pervasive Devices and Technology	3+0
EC-892	Real-time Systems	3+0
CS-940	Special Topics in Requirement Engineering	3+0
CS-950	Selected Topics in Human Computer Interface	3+0
EE-8XX	Research Methodologies	3+0
ME-8XX	Modeling and Simulation	3+0
CS-899	MS Thesis	0+6

PhD Computer Science

DCS has recently launched PhD Computer Science program. It is a full-time study program for the scholars to enhance their expertise and professional skills by studying advanced courses and through the application of latest research methodologies. Department is committed to train and produce graduates that have comprehensive knowledge and are capable of integrating their professional education and experience to solve real-life problems through innovative ideas. Program emphasizes on quality research as a gateway to new horizons of scientific knowledge and discovery. The PhD curriculum is flexible and has been designed considering HEC guidelines. Within the scope of general requirements, students may opt to suit their individual research interests based on their educational backgrounds. Experienced researchers and highly qualified faculty members working in multiple research domains are available to guide the students. Research groups are working in different fields of computer science including major areas such as advanced analysis of algorithms, theory of computation, simulation & modeling, multimedia communication, cryptography and security, computer vision, machine learning, decision support systems, data mining, web engineering, software project management, requirement engineering, operating systems, next generation networks, parallel & distributed computing, mobile and pervasive computing, artificial Intelligence, image processing, database systems, software engineering, and human computer interaction. The program comprises 18 credit hours of coursework and 30 credit hours of research. The courses can be selected in consultation with the respective PhD supervisors from the list of graduate courses. The PhD program requires candidates to undertake six graduate level courses and must pass the qualifying examination before undertaking the research work in a chosen area for the doctoral thesis. The courses and their contents are given as follow: -

PhD Courses

Code	Course Title	Cr. Hr.
EE-801	Advanced Computer Architecture	3+0
CS-802	Advanced Algorithm Analysis	3+0
EC-803	VLSI Architecture & Design	3+0
EC-805	Microcontroller system design & applications	3+0
EC-809	High performance programming with multicore & GPUs	3+0
CS-811	Advanced Computer Networks	3+0
CS-813	Network Simulation & Modeling	3+0
CS-814	Multimedia Communication	3+0
CS-815	Cryptography & Network Security	3+0
CS-816	Advanced Wireless Networks	3+0
CS-817	Research Trends in Pervasive Computing	3+0
CS-818	Network Performance Evaluation	3+0
CS-819	Information Theory & Coding	3+0
CS-822	Advanced Digital Image Processing	3+0
CS-823	Machine Learning	3+0
EC-825	Embedded Control Systems	3+0
CS-827	Advanced Pattern Recognition	3+0
CS-829	Advanced Computer Vision	3+0
CS-831	Advanced Database Management Systems	3+0
EC-831	Advanced Digital Signal Processing	3+0
CS-832	Data Mining	3+0
CS-835	Advanced Web Analytics	3+0
CS-837	Distributed Database Systems	3+0
CS-838	Data Visualization	3+0
CS-839	Multimedia and Web Databases	3+0
CS-841	Advanced Software Engineering	3+0
CS-844	Information Security	3+0
CS-845	Research Trends in Requirement Engineering	3+0
CS-846	Intelligent User Interfaces	3+0

Code	Course Title	Cr. Hr.
CS-847	Global System Development	3+0
EC-853	Pattern Recognition & Analysis	3+0
CS-857	Parallel & Distributed Systems	3+0
CS-876	Neural and Fuzzy Systems	3+0
CS-877	Soft Computing	3+0
CS-878	Intelligent Systems	3+0
CS-879	Multimedia Systems and Applications	3+0
CS-880	Mobile Communication Systems	3+0
CS-881	Advanced Big Data Analysis	3+0
CS-882	Contemporary Issues in Distributed Database Systems	3+0
CS-883	Advanced Cloud Computing	3+0
CS-884	Advanced Evolutionary Computing	3+0
CS-885	High Performance Computing	3+0
EC-892	Real Time Systems	3+0
CS-910	Selected Topics in Computer Networks	3+0
CS-920	Selected Topics in Digital Image Processing	3+0
CS-930	Special Topics in Database Management Systems	3+0
CS-941	Selected Topics in Software Engineering	3+0
EE-8XX	Research Methodologies	3+0
ME-8XX	Modeling and Simulation	3+0
CS-999	PhD Thesis	0+30

BS SOFTWARE ENGINEERING

BS Software Engineering

Software plays a central and underpinning role in almost all aspects of daily life: communications, government, manufacturing, banking and finance, education, transportation, entertainment, medicine, agriculture, and law. The number, size, and application domains of computer programs have grown dramatically; as a result, huge sums are being spent on software development. Most people's lives and livelihoods depend on this development's effectiveness. Software products help us to be more efficient and productive. They provide information, make us more effective problem solvers, and provide us with safer, more flexible, and less confining work, entertainment, and recreation environments.

Software Engineering is the application of a systematic, disciplined and quantifiable approach to the design, development, operation, and maintenance of software systems. It is in fact the practice of designing and implementing large, reliable, efficient and economical software by applying the principles and practices of engineering. The department aims to train students in all aspects of software life cycle from specification through analysis and design to testing, maintenance and evolution of software product.

Scheme of Study

Semester-1

Code	Course Title	Cr.Hr.
CS-101	Introduction to Information and Communication Technologies	2+1
CS-102	Programming Fundamentals	3+1
HS-101	English	3+0
MT-101	Calculus & Analytical Geometry	3+0
HS-102	Pakistan Studies	2+0
BS-105	Applied Physics	2+1
QT-101	Translation of the Quran : Beliefs	*1+0
Total Credit Hours		**18**

Semester-2

Code	Course Title	Cr.Hr.
CS-104	Object Oriented Programming	3+1
HS-103	Communication Skills	3+0
CS-103	Discrete Structures	3+0
IS-211	Islamic Studies	2+0
CS-204	Software Engineering	3+0
HS-403	Management & Entrepreneurship	3+0
Total Credit Hours		**18**

Semester-3

Code	Course Title	Cr.Hr.
CS-201	Data Structures & Algorithms	3+1
SE-201	Software Requirement Engineering	3+0
CS-408	Human Computer Interaction	2+1
MT-203	Linear Algebra	3+0
HS-302	International Relations	3+0
HS-203	Community Service	0+1
QT-201	Translation of the Quran : Worships	*1+0
Total Credit Hours		**16**

Semester-4

Code	Course Title	Cr.Hr.
CS-303	Operating Systems	3+1
CS-304	Database Systems	3+1
SE-202	Software Design & Architecture	2+1
MT-302	Probability and Statistics	3+0
CS-302	Artificial Intelligence	2+1
Total Credit Hours		**17**

Semester-5

Code	Course Title	Cr.Hr.
SE-305	Software Construction & Development	2+1
CS-306	Data Communication and Computer Networks	3+1
HS-201	Technical Report Writing	3+0
SE-3XX	SE Supporting –I	3+0
SE-3XX	SE Supporting - II	3+0
QT-301	Translation of the Quran : Moral Values	*1+0
Total Credit Hours		**16**

Semester-6

Code	Course Title	Cr.Hr.
SE-306	Software Quality Engineering	3+0
CS-402	Information Security	3+0
HS-401	Professional Values and Ethics	2+0
CS-312	Web Engineering	2+1
SE-4XX	SE Elective - I	3+0
SE-3XX	SE Supporting - III	3+0
Total Credit Hours		**17**

Semester-7

Code	Course Title	Cr.Hr.
SE-401	Software Project Management	3+0
SE-402	Software Re-Engineering	3+0
SE-4XX	SE Elective -II	3+0
SE-4XX	SE Elective - III	3+0
ME-407	Health Safety and Environment	1+0
SE-499	Final Year Project - I	0+3
QT-401	Translation of the Quran : Dealing and Commandments	*1+0
Total Credit Hours		**16**

Semester-8

Code	Course Title	Cr.Hr.
SE-4XX	SE Elective – IV	3+0
SE-4XX	SE Elective – V	3+0
HS-404	Foreign Language	1+1
HS-402	Economics	2+0
SE-499	Final Year Project – II	0+3
Total Credit Hours		**13**

*Non Credited Course (NC)

Supporting Courses

Any three courses to be opted

Code	Course Title	Cr. Hr.
SE-301	Business Process Engineering	3+0
CS-313	Formal Methods in Software Engineering	3+0
SE-302	Operations Research	3+0
SE-303	Simulation and Modeling	3+0
SE-304	Stochastic Processes	3+0
	Total (Any THREE of the above)	**9+0**

Elective Courses

Any five courses to be opted

Code	Course Title	Cr. Hr.
SE-403	Agent Based Software Engineering	3+0
SE-404	Big Data Analytics	3+0
SE-405	Cloud Computing	3+0
SE-406	Data Encryption and Security	3+0
SE-407	Global Software Development	3+0
SE-408	Information Systems Audit	3+0
SE-409	Management Information Systems	3+0
SE-410	Multimedia Communication	3+0
SE-411	Real Time Systems	3+0
SE-412	Semantic Web	3+0
SE-413	Software Engineering Economics	3+0
SE-414	Software Metrics	3+0
SE-415	Systems Programming	3+0
CS-305	Computer Graphics	3+0
CS-417	Game Development	3+0
CS-403	Mobile Application Development	3+0
CS-416	Natural Language Processing	3+0
	Total (Any FIVE of the above)	**15+0**

Laboratories

Practical experience is part and parcel of every professional institution. The Department of CS maintains a wide variety of state- of-the-art laboratories. There are seven dedicated, spacious and well-equipped laboratories, providing software and hardware resources. The manuals of all lab experiments have been prepared and are in-line with curriculum of the program. All the laboratories are equipped with latest machines with licensed and updated software. Lab experiments are conducted by the experienced and qualified lab demonstrators under the guidance of faculty members. The latest, state-of-the-art PC workstations are set up with wired and wireless internet access to facilitate students in completing their assignments, lab reports, etc. The detail of laboratories is given below:

Computing Lab I:

This general-purpose Computing Lab provides open access support for students. All general-purpose software packages are installed on the latest machines.

Computing Lab II:

Each machine of this lab provides specialized software in addition to general purpose software design and application. This laboratory is dedicated for core computing courses. Students can get maximum benefit by having hands-on experience by utilizing the latest workstations and simulation tools and training kits required for the completion of experimental work.

Embedded Systems Lab:

It provides embedded and other hardware resources that are required to design, analyze and implement embedded systems. In addition, the lab also has a number of analog and digital equipment required for experimentation and project completion at both junior and senior level of undergraduate studies.

Data Communication and Networks Lab:

It is utilized to conduct experiments for communication courses in the field of wired and wireless communication. It helps the students in grasping theoretical concepts and visualization of data transmission in terms of bits and bytes. Peer-to-peer and client-server models along with various network topologies are demonstrated. Different simulation packages are installed in the lab to get an in-depth understanding and practical exposure to network communication technologies.

Artificial Intelligence Lab:

The Artificial Intelligence (AI) lab focuses on advancing computer vision and decision-making systems necessary for computers to make critical decisions when interacting with the world. It greatly helps students to do where in different areas such as rational decision making, distributed systems of multiple agents, machine learning, reinforcement learning, cognitive learning, game theory, natural language processing and robotics.

Database Systems Lab:

A wide variety of graphics, CAD, database management software, and other software packages are available on these machines. Students use this lab heavily for designing database solutions, generating queries, implementing interactive processing and developing most suitable GUIs.

Final Year Project Lab:

This lab is dedicated for the students of final year to work on their final year project. The lab is equipped with all the necessary software's and state-of-the-art systems.

Electronics Lab:

Electronics lab is equipped with components such as diodes, transistors, operational amplifiers, oscilloscope, power supplies and function generators which are essentially required to practically implement the theoretical concepts of electronic systems.

Digital Systems Lab:

Digital systems lab is designed for the understanding of digital logic concepts and consists of oscilloscopes, digital trainers, digital multimeters, function generators, 8086 microprocessor kits and supporting accessories. Implementation of adders, subtractors, logic circuits, decoders, encoders, multiplexers, combinational circuits, sequential logic circuits, flip-flops, counters and registers also carried out in this lab. It also covers practical implementation of microprocessor and interfacing techniques.

MS Software Engineering

Software plays a central and underpinning role in almost all aspects of daily life: communications, government, manufacturing, banking and finance, education, transportation, entertainment, medicine, agriculture, and law. The number, size, and application domains of computer programs have grown dramatically; as a result, huge sums are being spent on software development. They provide information, make us more effective problem solvers, and provide us with safer, more flexible, and less confining work, entertainment, and recreation environments. Software Engineering is the application of a systematic, disciplined and quantifiable approach to the design, development, operation, and maintenance of software systems. It is in fact the practice of designing and implementing large, reliable, efficient and economical software by applying the principles and practices of engineering. The Department aims to launch MS Software Engineering from Fall 2021. To fulfill the MS degree requirements, a student needs to complete 30 credit hours by taking 8 courses of 24 credit hours and 6 credit hours of thesis. The objective of thesis is to enable our students to select a problem, identify research questions, develop hypothesis, conduct experiments and furnish their findings. However, a student may opt for non-thesis option and in this case, he/she has to take 10 courses and a mandatory technical report. Curriculum has been designed in accordance with guidelines of the HEC. The courses can be selected from the list of courses offered in the semesters.

MS Courses
Core Courses

Code	Course Title	Cr. Hr.
SE-701	Advanced Requirements Engineering	3+0
SE-702	Advanced Software System Architecture	3+0
SE-703	Software Testing and Quality Assurance	3+0

Elective Courses

Any 2 courses for thesis option **OR** any 2-4 courses for non-thesis option

Code	Course Title	Cr. Hr.
SE-801	Software Measurement and Metrics	3+0
SE-802	Component Based Software Engineering	3+0
SE-803	Advanced Formal Methods	3+0
SE-804	Advanced Human-Computer Interaction	3+0
SE-805	Agile Software Development Methods	3+0
SE-806	Empirical Software Engineering	3+0
CS-841	Advanced Software Engineering	3+0
CS-842	Advanced Software Project Management	3+0
CS-843	Software Quality Assurance	3+0
CS-854	Advanced Information Management Systems	3+0
CS-877	Soft Computing	3+0
CS-879	Multimedia Systems and Applications	3+0
CS-883	Advanced Cloud Computing	3+0

General Elective Courses

Code	Course Title	Cr. Hr.
SE-807	Software Risk Management	3+0
SE-808	Software Configuration Management	3+0
SE-809	Reliability Engineering	3+0
SE-810	Complex Networks	3+0
SE-811	Agent Based Modeling	3+0
CS-823	Machine Learning	3+0
CS-832	Data Mining	3+0
CS-834	Web Engineering	3+0
CS-835	Advanced Web Analytics	3+0
CS-836	Semantic Web	3+0
CS-844	Information Security	3+0
CS-854	Advanced Information Management Systems	3+0
CS-856	Software Architecture	3+0
CS-858	Research Methods	3+0
EC-861	Advanced Operating Systems	3+0
CS-899	Thesis	6+0

Research Groups, Technology Development, and Incubation Centre

Following research groups are actively working in the Department: -

Computer Vision and Machine Learning (CVML) Research Group

The CVML is a research group that focuses on applied research in Deep Learning, Pattern Recognition, Computer Vision and Machine Learning for solving real-world large-scale problems. Objective is to design and develop systems capable of recognizing images and videos and using them for the purpose of decisions making. Development of such systems not only requires dedication and commitment to solve complicated classification and clustering problems but also requires insight to challenging computational questions.

Multimedia and Pervasive Computing (MPCR) Research Group

The multimedia and pervasive computing research (MPCR) group at HITEC University has brought together researchers having PhDs from different counties in the field of Innovations in Intelligent Multimedia and its Applications such as video streaming, intelligent behavior modeling and control for mobile manipulators, mobile-gaming, indexing video summaries for quick video browsing, web service processes, Augmented and Virtual environments, ambient intelligence, and prevention and detection of attacks to ubiquitous databases. As a result, this group encourages students and researchers to collaborate among themselves to facilitate society by sharing knowledge and joint ventures.

intelligence, and prevention and detection of attacks to ubiquitous databases. As a result, this group encourages students and researchers to collaborate among themselves to facilitate society by sharing knowledge and joint ventures.

Software Research and Application Modeling (SRAM) Research Group

The main objective of Software Research and Application Modeling (SRAM) is to conduct cutting-edge research in various areas of theoretical and practical issues in the development and design of software and application modeling. The major focus of this research group includes Software and Architectural Design, Specification, Analysis, Application Modeling Process, verification, testing, User Experience and Human-Computer Interaction.

Computer Architecture and Networks (CAN) Research Group

Due to rapid advancement in the many-core computing architectures in the present era used to accelerate scientific and embedded applications, the focus of the CAN research group at HITEC University, Taxila is to develop multi-job scheduling algorithms for heterogeneous computer architectures such as spatial sharing of GPU cores between multiple data-parallel jobs, improved utilization of network interconnect PCIe between CPU and GPU during data transfer, accelerating scientific and embedded applications using many-core GPUs using latest heterogeneous computing APIs.

FACULTY OF BASIC SCIENCES

FACULTY OF BASIC SCIENCES

01 Department of Management Sciences

02 Department of Mathematics

03 Department of Islamic Studies

Prof. Dr. Junaid Ali Khan
Acting Dean Sciences /
Chairperson Computer Science

The Faculty of Basic Sciences (FBS) comprises Departments of Mathematics, Islamic Studies, Management Sciences and Physics. The departments of Mathematics and Islamic studies offers both undergraduate and postgraduate programs. Faculties of all the departments are recognized for its excellence in research and producing graduates of international standards. The Departments are also offering quality courses at par with international standards. The department of mathematics and Islamic Studies have very strong MS and PhD programs and are very popular among researchers.

Over the years, the faculty has been very revolutionary in its approach in offering state of the art courses and of new trends. Our faculty members are as dedicated to teaching as they are in their research pursuits, bringing their knowledge into the learning environment and encouraging our students to develop and flourish academically. We pride ourselves on imparting students with the skills, knowledge, and the ability to discover and understand themselves through research led-teaching. We are passionate about delivering inspirational, innovative and cutting edge subject matter. Our goals are embedded in our strategy. Learning of students takes place through an emergent process of exploration and discovery. Guided by subject experts and those with specialist roles in learning support, students use the scholarly and research practices of their disciplines to move towards autonomy in creating and sharing knowledge. Apart from classroom teaching, the faculty members remain involved in the supervision of the students while guiding them in various extra and co-curricular activities, literary pursuits and competitions within and outside University. The conducive learning environment provided by the Faculty of Basic Sciences ensures attainment of our objectives.

The Faculty is led by Prof. Dr. Saad Rehman who has more than 17 years of teaching and research experience. He did his M.Sc. and PhD from University of Sussex, UK. He has served as Chairman Department of Computer Engineering, HITEC University. He has produced 3 PhD and more than 20 MS students. He published more than 110 research papers in reputable International journals and conferences. Dr. Saad Rehman has done various consultancies at numerous government and private sector industries.

Mr. Farrukh Shahzad
Chairperson / Registrar

The 21st century brings a new set of unprecedented challenges for the corporate world, which has translated into the need for a truly global and efficient workforce. The Management Sciences program provides the foundations for creating, transforming, and leadership of sustainable, innovative enterprises for the graduates. The essence of Management Sciences rests in its practicability in problem-solving and decision making by using qualitative and quantitative methods. Business education is one of the most sought-after degree programs in the country, irrespective of the economic situation; a business administration degree can always help realize dreams. The Department of Management Sciences at HITEC University is established to prepare graduates for an influential career by combining business fundamentals with a global perspective. Students will be able to lead and guide society with vision and have the ability and skills acquired through appropriate training to manage its resources effectively and cater to national and international organizations' needs and requirements.

Our vision at HITEC University in general, and the Department of Management Sciences in particular, is to arouse curiosity in our students and to concentrate on solid core courses that will prepare them for success in their chosen field of study while also giving them the flexibility to pursue their interests and passions during their degree, with the choice of majoring in an area of interest. We are committed to producing forward-thinking managers and leaders that impact the lives of real people and businesses. To achieve this objective, particular importance has been given to designing a business curriculum developed by highly competent professionals to ensure a comprehensive and wide array of subjects to manage the dynamic business world's needs. The curricula and syllabi are designed according to the Higher Education Commission's guidelines and the requirements of the business world. Our distinguished and highly qualified faculty possesses a practical teaching skill-set and actively engages in research and consultancy in the field, which creates an enriched learning environment. Department of Management Sciences is committed to providing a conducive environment and state-of-the-art facilities to the faculty and students to ensure a creative and progressive academic experience. Students will also engage with industry professionals, feel part of the corporate learning community, and thrive and achieve their best work.

Faculty

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Bachelor of Business Administration Program

The program's educational goal is to provide students with the knowledge and skills they need to contribute appropriately and professionally as business professionals, as well as to demonstrate cross-discipline understanding of core business functions and to exhibit readiness to work in a diverse work setting, respecting various cultural values, and performing ethically. The undergraduate program (BBA) is developed with a clear objective to produce future managers with strong theoretical knowledge and leadership & management skills. Due emphasis is placed upon cultivation of entrepreneurial spirit and leadership qualities to produce managers with high competence and ethical values.

A unique combination has been adopted to create managerial skills, confidence building and decision making. The undergraduate program is of eight semesters spread over four years, and the curriculum is designed to enable students to work effectively in a business environment that has become increasingly complex. The programs offer specialization opportunities to students in areas like Marketing, Human resources and Finance. The students will be required to undergo eight weeks of Noncredit Internship in a business organization during the summer break after the sixth semester and engage in Community Service in line with the program designed by the Directorate of Student Affairs of the University. Students will have the opportunity to work on a business project in their 7th and 8th semesters bringing in all their knowledge gained in the first six semesters of a four-year program and will address real-life business problems.

Scheme of Study

Semester-1

Code	Course Title	Cr. Hr.
IT-101	IT in Business	2 + 1
HS-101	English	3 + 0
MT-108	Business Mathematics	3 + 0
IS-211	Islamic Studies	2 + 0
MKT-101	Principles of Marketing	3 + 0
MGT-101	Principles of Management	3 + 0
QT-101	Translation of the Quran : Beliefs	*1+0
Total Credit Hours		**17**

Semester-2

Code	Course Title	Cr. Hr.
ECO-101	Micro Economics	3 + 0
HS-103	Communication Skills	3 + 0
ACC-101	Financial Accounting - 1	3 + 0
HS-102	Pakistan Studies	2 + 0
MT-109	Business Statistics - 1	3 + 0
HS -106	Introduction to Sociology	3 + 0
Total Credit Hours		**17**

Semester-3

Code	Course Title	Cr. Hr.
ACC-102	Financial Accounting-II	3 + 0
MGT-204	Human Resource Management	3 + 0
ECO-201	Macro Economics	3 + 0
HS-202	Oral Communication	3 + 0
MGT-201	Organizational Behavior	3 + 0
MT-205	Statistical Inference	3 + 0
HS-203	Community Service	0 + 1*
QT-201	Translation of the Quran : Worships	*1 + 0
	Total Credit Hours	**18**

Semester-4

Code	Course Title	Cr. Hr.
MGT-205	Business Ethics	3+0
HS-107	Introducation to Psychology	3+0
FIN – 301	Business Finance	3+0
HS-204	Business Communication	3+0
MKT-201	Marketing Management	3+0
FIN-201	Cost Accounting	3+0
	Total Credit Hours	**18**

Semester-5

Code	Course Title	Cr. Hr.
FIN-202	Financial Management	3 + 0
MGT-301	Business Law	3 + 0
MIS-201	Management Information System	3 + 0
HS-303	Personal Management and Grooming	3 + 0
MGT-302	Business Research Methods	3 + 0
MKT-301	Consumer Behavior	3 + 0
QT-301	Translation of the Quran : Moral Values	*1 + 0
	Total Credit Hours	**18**

Semester-6

Code	Course Title	Cr. Hr.
HS-405	Entrepreneurship & Innovation	3 + 0
MGT-304	Operations Management	3 + 0
FIN-302	Money and Banking	3 + 0
HS-304	Pakistan Economy	3 + 0
MGT-305	Strategic Management	3 + 0
HS-302	International Relations	3 + 0
	Total Credit Hours	**18**

* Summer Internship : Eight Weeks Internship during Summer Vacations

Semester-7

Code	Course Title	Cr. Hr.
MGT-401	International Business Management	3 + 0
HS-404	Foreign Language	1 + 1
HS-405	Logic & Critical Thinking	3 + 0
XXX	Specialization - I	3 + 0
XXX	Specialization - II	3 + 0
MGT-499	Final Year Project	3 + 0
QT-401	Translation of the Quran : Dealings & Commandments	*1 + 0
	Total Credit Hours	**17**

Semester-8

Code	Course Title	Cr. Hr.
MGT-211	Cross Cultural Management	3 + 0
XXX	Specialization – III	3 + 0
XXX	Specialization – IV	3 + 0
MGT-499	Final Year Project	3 + 0
	Total Credit Hours	**12**

*Non Credited Course (NC)

Electives Finance

Code	Course Title	Cr. Hr.
FIN-401	Corporate Finance	3+0
FIN-402	Commercial and Investment Banking	3+0
FIN-403	Security and Portfolio Analysis	3+0
FIN-404	Financial Markets and Institutions	3+0
FIN-405	International Finance	3+0
FIN-406	Analysis of Financial Statements	3+0

Electives HRM

Code	Course Title	Cr. Hr.
HRM-401	Recruitment & Selection	3+0
HRM-402	Training & Development	3+0
HRM-403	Performance Management	3+0
HRM-404	Negotiations and Conflict Management	3+0
HRM-405	Change Management	3+0
HRM-406	Human Resource Development	3+0

Electives Marketing

Code	Course Title	Cr. Hr.
MKT-401	Brand Management	3+0
MKT-402	Service Marketing	3+0
MKT-403	International Marketing	3+0
MKT-404	Retail Marketing	3+0
MKT-405	Customer Relationship Management	3+0
MKT-406	Advertising	3+0

BSc (Honors)
Accounting & Finance Program

The BS (Accounting & Finance) is a highly specialized degree, preparing the graduate as having expertise in Accountancy and Finance. The students will acquire the knowledge and technical skills needed to analyze accounting/finance and business problems, and they will understand how best to communicate and use financial information to support business decisions. The degree offers specialization in Accounting and/or Finance.

With the management of financial information underpinning all business activities, there are more employment and career opportunities in accounting and finance than many other areas of study. This degree will prepare students for a rewarding career in any sector of the economy. The graduates may work as a Financial Accountant, Forensic Accountant, Management Accountant, Auditor, Chief Financial Officer, Financial Advisor and Tax Specialist. Syllabus coverage of the courses allows the students not only to attain the BS (Hons) degree but also to attempt ACCA (UK) papers, within the 4 years. At the end of this time period, a candidate may become a graduate and a professional qualification holder. ACCA offers exemption of up to first 9 papers to the graduates having BS (Hons) Accounting and Finance degree.

The BS (Accounting & Finance) program is aimed at giving students a solid foundation in accounting and finance, rounded out with the all-important interpersonal, computer, and business communication skills critical for success in today's business environment. The degree will give students an understanding of the legal and regulatory environment that commercial organizations and accounting professionals must work within. They will learn the concepts and processes needed to protect, validate and attest to the integrity and reliability of financial information.

By studying financial institutions, markets, and business finance, students will learn about the components of the financial system and how it impacts upon financial decisions in an organization. Students will study the financial system, institutions, and financial instruments, which are involved with the transfer of funds between individuals, businesses and governments. This includes critical short-run decisions, such as cash management and credit policy, which affect the survival of the organization. Long-term decisions include investment in plant and equipment, fundraising, all of which determine the wealth of the owners

Semester-1

Code	Course Title	Cr. Hr.
IT-101	IT in Business	2+1
HS-101	English	3+0
MT-108	Business Mathematics	3+0
IS-211	Islamic Studies	2+0
MKT-101	Principles of Marketing	3+0
MGT-101	Principles of Management	3+0
QT- 101	Translation of the Quran : Beliefs	*1+0
	Total Credit Hours	**17**

Semester-2

Code	Course Title	Cr. Hr.
ECO-101	Micro Economics	3+0
HS-103	Communication Skills	3+0
ACC-101	Financial Accounting -1	3+0
HS-102	Pakistan Studies	2+0
MT-109	Business Statistics -1	3+0
HS -106	Introduction to Sociology	3+0
	Total Credit Hours	**17**

Semester-3

Code	Course Title	Cr. Hr.
ACC-102	Financial Accounting-II	3+0
MGT-204	Human Resource Management	3+0
ECO-201	Macro Economics	3+0
HS-202	Oral Communication	3+0
MGT-201	Organizational Behavior	3+0
MT-205	Statistical Inference	3+0
HS-203	Community Service 0 + 1	0+1
QT- 201	Translation of the Quran : Worships	*1+0
	Total Credit Hours	**18**

Semester-4

Code	Course Title	Cr. Hr.
MGT-205	Business Ethics	3+0
FIN-322	Financial Reporting	3+0
FIN—301	Business Finance	3+0
HS-204	Business Communication	3+0
FIN-404	Financial Market Institutions	3+0
FIN-201	Cost Accounting	3+0
	Total Credit Hours	**18**

Semester-5

Code	Course Title	Cr. Hr.
FIN-202	Financial Management	3+0
MGT-301	Business Law	3+0
MIS-201	Management Information System	3+0
ACC-314	Managerial Accounting	3+0
MGT-302	Business Research Methods	3+0
FIN-316	Analysis of Financial Statement	3+0
QT- 301	Translation of the Quran : Moral Values	*1+0
	Total Credit Hours	**18**

Semester-6

Code	Course Title	Cr. Hr.
ACC-321	Taxation Management	3+0
MGT-304	Operations Management	3+0
FIN-302	Money and Banking	3+0
HS-304	Pakistan Economy	3+0
FIN-325	Investment & Portfolio Management	3+0
HS-302	International Relations	3+0
	Total Credit Hours	**18**

* Summer Internship : Eight Weeks Internship during Summer Vacations

Master of Business Administration

The HITEC University MBA program is aimed at developing student's intellectual ability, executive personality and managerial skills through an appropriate blending of business and general education. The MBA program at HITEC university is as unique as it is transformative, it is focused on creating business leaders with the power to effect positive societal change.

The MBA curriculum provides students with a comprehensive management education of globally recognized best practices with flexibility of their adaptation to indigenous entrepreneurial and societal context. Our MBA Program is designed not only to prepare innovative leaders and professionals for corporate and public sectors, but also develop entrepreneurial acumen creating value for the world. The program will help students to develop a range of analytical, conceptual and operational skills that address the many challenges in industries.

The program offers a wide spectrum of learning opportunities to the students, fostering a skill set adaptive to a dynamically changing world. The development of this competence is reflected in our commitment to teaching excellence and scholarly research to animate instruction and create a futuristic knowledge base. The HITEC MBA diligently seeks possible opportunities to bolster the program offerings with strategic collaborations with various industries and other academic institutions in the region.

Our MBA is a professional degree that prepares individuals for careers in a variety of fields, including business organizations, government, international agencies, and the nonprofit sector. The Students can pursue their career as successful entrepreneurs, or to assume leadership positions in SMEs, major local and multinational corporations, in consulting firms, or in government service.

The HITEC University MBA is a 2 years' degree program which comprises of 66 credit hours for those with 16 years of education. There are two pathways in MBA Program. The minimum duration for completing the MBA degree is 1.5 years, only applicable for those who have a first degree in business or related disciplines, and may secure an exemption of Maximum 30 credit hours as per the University policy. Also, those coming with background other than business shall complete 4 semesters (i.e. two years duration). The main entry requirement is at least 16 years of formal education with 2 CGPA is required in last degree and 50% marks in Intermediate.

Scheme of Study

Semester-1

Code	Course Title	Cr. Hr.
HS-406	Introduction to Economics	3 + 0
MT-205	Statistical Inference	3 + 0
ACC-101	Financial Accounting-1	3 + 0
MKT-201	Marketing Management	3 + 0
MGT-101	Principles of Management	3 + 0
Total Credit Hours		**15**

Semester-2

Code	Course Title	Cr. Hr.
FIN-521	Financial Management	3 + 0
ECO-522	Managerial Economics	3 + 0
ACC-526	Managerial Accounting	3 + 0
X-XXX	Elective 1	3 + 0
X-XXX	Elective 2	3 + 0
X-XXX	Elective 3	3 + 0
Total Credit Hours		**18**

Semester-3

Code	Course Title	Cr. Hr.
MGT-611	Applied Research Methods	3 + 0
MGT-613	Strategic Management	3 + 0
X-XXX	Elective 4	3 + 0
X-XXX	Elective 5	3 + 0
X-XXX	Elective 6	3 + 0
X-XXX	Dissertation/Project -Proposal Development/Elective- Course	3 + 0
Total Credit Hours		**18**

Semester-4

Code	Course Title	Cr. Hr.
MKT-525	Strategic Marketing	3 + 0
FIN-621	Strategic Finance	3 + 0
X-XXX	Elective 7	3 + 0
X-XXX	Elective 8	3 + 0
X-XXX	Dissertation/Project-Writeup /Elective-Course	3 + 0
Total Credit Hours		**15**

Scheme of Study

Semester-1

Code	Course Title	Cr. Hr.
ECO-522	Managerial Economics	3 + 0
ACC-526	Managerial Accounting	3 + 0
X-XXX	Elective 1	3 + 0
X-XXX	Elective 2	3 + 0
X-XXX	Elective 3	
Total Credit Hours		**12**

Semester-2

Code	Course Title	Cr. Hr.
MGT-611	Applied Research Methods	3 + 0
MGT-613	Strategic Management	3 + 0
X-XXX	Elective 4	3 + 0
X-XXX	Elective 5	3 + 0
X-XXX	Elective 6	3 + 0
X-XXX	Dissertation/Project –Proposal Development/Elective- Course	3 + 0
Total Credit Hours		**18**

Semester-3

Code	Course Title	Cr. Hr.
MKT-525	Strategic Marketing	3 + 0
FIN-621	Strategic Finance	3 + 0
X-XXX	Elective 7	3 + 0
X-XXX	Elective 8	3 + 0
X-XXX	Dissertation/Project-Writeup /Elective-Course	3 + 0
Total Credit Hours		**15**

Note: Students with business background are allowed an exception of up to 18 Cr Hrs. of the following deficient courses offered to non-business background:

- Economics
- Financial Management
- Marketing Management
- Principles Management
- Statistical Inference
- Financial Accounting

SPECIALIZATION AREAS

Finance

Code	Course Title	Cr. Hr.
FIN-713	Investment Analysis & Advanced Portfolio Management	3+0
FIN-624	Financial Reporting and Analysis	3+0
FIN-713	Financial Risk Management	3+0
FIN-614	Financial Market & Institutions	3+0
FIN-623	Financial Modelling	3+0
FIN-615	Islamic Banking and Finance	3+0
FIN-624	Taxation and Auditing	3+0
FIN-714	Financial Econometrics	3+0
FIN-623	Financial Derivatives	3+0
FIN-715	Fixed Income Analysis	3+0
FIN-610	Debt and Equity Markets	3+0
FIN-612	SME and Micro-Financing	3+0
FIN-716	Financial Modeling for Investment Decisions	3+0
FIN-831	Applied Corporate Finance	3+0
FIN-832	Mergers and Acquisitions	3+0

Marketing

Code	Course Title	Cr. Hr.
MKT-611	International Marketing	3 + 0
MKT-625	Advanced Brand Management	3 + 0
MKT-613	Marketing Analytics	3 + 0
MKT-627	Integrated Marketing Communication	3 + 0
MKT-614	Promotion and Advertising Management	3 + 0
MKT-625	Export Marketing	3 + 0
MKT-615	New Product Development	3 + 0
MKT-625	Advance B2B Marketing	3 + 0
MKT-616	Consumer Behavior	3 + 0
MKT-625	Services Marketing	3 + 0
MKT-615	Brand Management	3 + 0
MKT-715	Future Marketing Technologies	3 + 0
MKT-626	Strategic Marketing and Planning	3 + 0
MKT-721	Marketing Strategies for Emerging Economies	3 + 0
MKT-724	Sales Management	3 + 0

Human Resource Management

Code	Course Title	Cr. Hr.
MGT-615	Compensation Management	3 + 0
MGT-821	Innovation and Change Management	3 + 0
MGT-712	International Human Resource Management	3 + 0
MGT-627	Recruitment and Selection Techniques	3 + 0
MGT-617	Training and Development	3 + 0
MGT-626	Human Resources Information Systems	3 + 0
MGT-618	Job Analysis and Design	3 + 0
MGT-715	Human Resource Development	3 + 0

Code	Course Title	Cr. Hr.
MGT-726	Leadership Studies	3 + 0
MGT-612	Labor Relations Management	3 + 0
MGT-825	Management of Diversity	3 + 0
MGT-813	Organizational Learning & Knowledge Management	3 + 0
MGT-814	Performance Appraisals	3 + 0
MGT-616	Organizational Development	3 + 0
MGT-811	Talent Management and Succession Planning	3 + 0

Semester-7

Code	Course Title	Cr. Hr.
ACC-411	Audit & Assurance	3+0
HS-404	Foreign Language	1+1
HS-405	Logic & Critical Thinking	3+0
XXX	Specialization - I	3+0
XXX	Specialization - II	3+0
MGT-499	Final Year Project	3+0
QT- 401	Translation of the Quran : Dealings & Commandments	*1+0
	Total Credit Hours	**18**

Semester-8

Code	Course Title	Cr. Hr.
FN- 421	Islamic Banking and Finance	3+0
ACC-107	Accounting & Financial Information Systems	2+1
XXX	Specialization – III	3+0
XXX	Specialization – IV	3+0
MGT-499	Final Year Project	3+0
	Total Credit Hours	**15**

*Non Credited Course (NC)

Elective Courses Finance

Code	Course Title	Cr. Hr.
FN-414	Strategic Financial Management	3+0
FN-415	Corporate Risk Management	3+0
FN-424	Treasury and Fund Management	3+0
FN-425	Investment Banking	3+0
FN-412	Advance Corporate Finance	3+0
FN-413	Public Finance	3+0
FN-423	Behavioral Finance	3+0
FN-424	Corporate Governance	3+0
FN-416	Contemporary Issues in finance	3+0
FN-426	Financing of SME	3+0
FN-417	Money and Capital Markets	3+0
FN-427	Development Finance	3+0
FN-428	Applied Corporate Finance	3+0
FN-418	Working Capital Management	3+0

Elective Courses Accounting

Code	Course Title	Cr. Hr.
ACC-414	Advanced Performance Management	3+0
ACC-415	Advanced Auditing & Assurance	3+0
ACC-424	Advanced Managerial Accounting	3+0
ACC-425	Public Sector Accounting	3+0
ACC-422	Forensic Accounting	3+0
ACC-423	Advance Financial Reporting	3+0
ACC-415	Budgeting	3+0
ACC-416	Accounting Theory	3+0
ACC-417	Actuarial Accounting	3+0
ACC-418	Tax Management and Optimization	3+0
ACC-419	Merger and Acquisition Accounting	3+0
ACC-425	Strategic Management Accounting and Control	3+0

DEPARTMENT OF MATHEMATICS
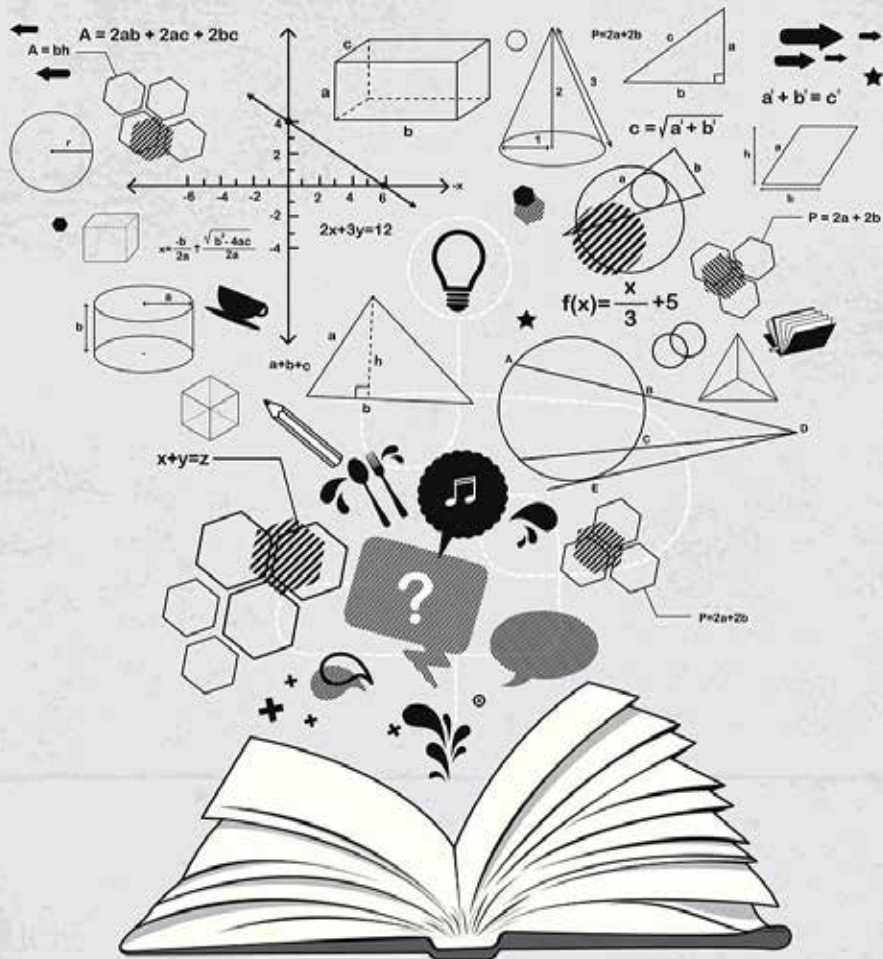
Dr. Rashid Mehmood
Chairperson

It is a universally established fact that Mathematics infuses logic, rationality and a systematic process of analysis. These attributes provide the requisite "spine" to basic sciences formulating the foundation of all engineering subjects. The Department of Mathematics at HITEC University was established in 2010 that aims at providing a comprehensive knowledge of Mathematics at undergraduate as well as graduate and doctoral level. At undergraduate level the students of engineering disciplines are provided with knowledge of Applied and Engineering Mathematics.

The MS & PhD (Mathematics) programme has earned a great repute over the years and students all over the country show great enthusiasm for admission in the Department of Mathematics HITEC University. The students are imparted state of the art education and the curriculum has been synthesized with objective to produce conceptual and motivated mathematicians of international standard. Various syllabi, therefore, have been designed to enrich the students' understanding towards the subject of Mathematics with a view to helping them encounter practical problems successfully in their careers.

Apart from going through the course work, the students

are encouraged to carry out research work, leading to publications in renowned international journals. Being mindful of the importance of subject of Mathematics, the University has inducted highly qualified research oriented permanent faculty members, all PhD's except one to meet all the challenges at undergraduate as well as graduate and doctoral levels. The Department has successfully produced 22 PhDs and 200+ MSs in a typical span of time.

With the launch of four-year BS (Mathematics) in Fall-2019, the Department is now going to build its own incubation space for the research students to embark on MS & PhD programme of Mathematics at HITEC University. This programme will develop the analytical, abstract and structured thinking of students. The students will be able to acquire the skill and knowledge from an exceptionally broad range of topics covering Pure and Applied Mathematics, Mathematical Modeling, Numerical Analysis, Statistics and Operational Research.

Despite teaching Mathematics a plentiful emphasis is laid on the character building of young students. This aspect is taken care of consciously so that after graduating from this institution they should not only portray themselves as good Mathematicians but also as good citizens and good Muslims.

In today's data-driven world, the application of statistics in everyday life is an ever-present reality that touches all aspects of society. Though the field of statistics originated centuries ago, the impact has exploded in recent years as modern statisticians have advanced applications of statistics through innovative, problem-solving approaches. With the emergence of cutting-edge technologies such as data science and artificial intelligence the importance of statistical algorithms has climbed great heights. Well, we all know that statistics is a part of mathematics. Statistics can't function without mathematics. Where there is data, mathematics and statistics are bound to play their role

The department has successfully pitched a dedicated and flagship forum 'ICAEM' for mathematics community that provides a platform for the presentation and discussion of newly emerging ideas and concepts in the field of Applied and Engineering Mathematics. It intends to bring together the system designers and practicing engineers to gain cognizance of the researchers' state-of-the-art findings covering a wide domain of Applications in the field of Mathematics. International Conference on Applied and Engineering Mathematics is the event that is organized annually under the auspices of Mathematics Department HITEC University. National and International keynotes are especially invited to present their research work at the occasion.

Faculty

Dr. Rashid Mehmood (HEC Approved Supervisor)

Designation:	Associatte Professor & Chairperson
Qualification:	PhD (Mathematics) Quaid-i-Azam University, Islamabad
Area of Interest:	Nanofluids, Rheology, Heat Transfer, Numerical and Series Solutions
Contact:	rashid.mehmood@hitecuni.edu.pk

Dr. Naveed Ahmed (HEC Approved Supervisor)

Designation:	Assistant Professor
Qualification:	PhD (Mathematics) HITEC University, Taxila
Area of Interest:	Fluid Mechanics, Numerical and Analytical Techniques, Solitary wave theory, Fractional calculus
Contact:	naveed.ahmed@hitecuni.edu.pk

Dr. Farman Ullah Khan (HEC Approved Supervisor)

Designation:	Assistant Professor
Qualification:	PhD (Mathematics), COMSATS University Islamabad
Area of Interest:	Computational Fluid Dynamics, Liquid Chromatography, Process Engineering
Contact:	farman.khan@hitecuni.edu.pk

Ms. Rafay Mustafa

Designation:	Lecturer
Qualification:	MPhil (Mathematics), NUST Islamabad
Area of Interest:	Computational Mathematics
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Dr. Arif Ullah Khan (HEC Approved Supervisor)

Designation:	Lecturer
Qualification:	Ph.D. (Mathematics) Quaid-i-Azam University Islamabad
Area of Interest:	Fluid Mechanics, Numerical Analysis, Simulations
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Dr. Dania Saleem Malik

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Dr. Feroz Khan (HEC Approved Supervisor)

Designation:	Lecturer
Qualification:	PhD (Central South University, Hunan, China). AFHEA, UK
Area of Interest:	Numerical Analysis, Analysis of Stochastic PDEs, Solving PDEs using Deep Learning.
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Dr. Naeem Ullah

Designation:	Lecturer
Qualification:	PhD (Mathematics) Quaid i Azam University Islamabad Pakistan
Area of Interest:	Applied Mathematics, Fluid Dynamics, Computational Fluid Dynamics, Modeling and Simulation, Nanofluids, Partial Differential Equation, Numerical Analysis, Finite Element Method.
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Dr. Misbah Farheen

Designation:	Lecturer
Qualification:	PhD Mathematics Quaid-i-Azam University Islamabad
Area of Interest:	Fixed Point Theory
Contact:	misbah.farhen@hitecuni.edu.pk

Dr. Muhammad Irfan

Designation:	Lecturer
Qualification:	PhD (Mathematics), National University of Science and Technology (NUST) , Islamabad
Area of Interest:	Boundary layer flows, Heat and mass transfer flows, Newtonian and non-Newtonian fluids, Stretching sheet flows, Incompressible and Compressible Flows, Steady and Unsteady flows, Nanofluid, Bionanofluid, Computational fluid dynamics.
Contact:	muhammad.irfan@hitecuni.edu.pk

Mohammad Noman Alam

|	
Designation:	Lecturer
Qualification:	MPhil (Mathematics)Allama Iqbal Open University ,Islamabad
Area of Interest:	Fluid Mechanics
Contact:	nouman.alam@hitecuni.edu.pk

BS Mathematics

BS Mathematics programme is designed for students who want to pursue their study in the field of Mathematics. It is a wide-ranging bachelor degree program which includes subjects like Calculus, Discrete Mathematics, Elementary Number Theory, Real Analysis, Analytical Mechanics etc. The designed curriculum is in accordance with the guidelines provided by Higher Education Commission (HEC) of Pakistan and is comprehensive enough to provide students with the necessary academic foundation to acquire higher degrees such as MS and PhD in Mathematics.

The program spans over four years (eight semesters) and comprises 132 credit hours. The semester wise breakup of curriculum is given as follows:
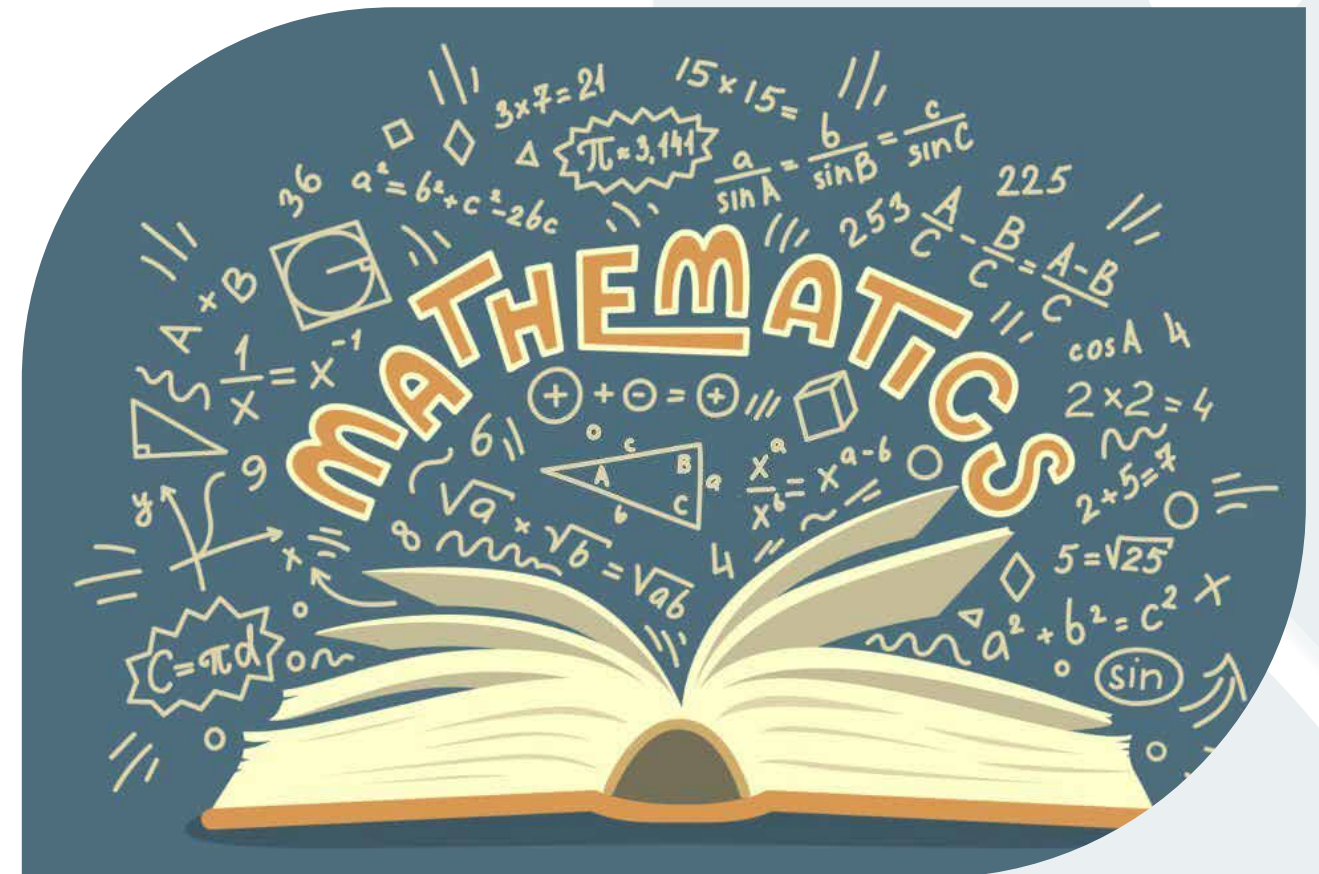
Semester-1

Code	Course Title	Cr. Hr.
IS-211	Islamic Studies	2+0
HS-101	English	3+0
CS-101	Introduction to Information and Introduction to Mechanics	2+1
PHY-101	Elements of Set Theory and	3+1
MTH-104	Mathematical Logic	3+0
MTH-105	Calculus-I	3+0
QT-101	Translation of the Quran : Beliefs	*1+0
	Total Credit Hours	**18**

Semester-2

Code	Course Title	Cr. Hr.
HS-102	Pakistan Studies	2+0
HS-103	Communication Skills	3+0
PHY-102	Electricity and Magnetism	2+1
EC-110	Computing Fundamentals	2+1
MTH-106	Calculus-II	3+0
MTH-107	Linear Algebra	4+0
	Total Credit Hours	**18**

Semester-3

Code	Course Title	Cr. Hr.
HS-201	Technical Report Writing	3+0
HS-403	Management & Entrepreneurship	3+0
MTH-205	Mathematical Computation with Software Packages	2+1
MTH-206	Calculus-III	3+0
MTH-207	Discrete Mathematics	3+0
MTH-208	Mathematical Statistics-I	3+0
QT-201	Translation of the Quran : Worships	*1+0
	Total Credit Hours	**18**

Semester-4

Code	Course Title	Cr. Hr.
HS-402	Economics	2+0
HS-404	Foreign Language	1+1
MTH-209	Group Theory	3+0
MTH-210	Elementary Number Theory	3+0
MTH-211	Ordinary Differential Equations-I	3+0
MTH-212	Mathematical Statistics-II	3+0
	Total Credit Hours	**18**

Semester-5

Code	Course Title	Cr. Hr.
HS-401	Professional Values & Ethics	2+0
MTH-301	Real Analysis –I	3+0
MTH-304	Complex Analysis	3+0
MTH-305	Metric and Topological Spaces	3+0
MTH-306	Ordinary Differential Equations-II	3+0
MTH-308	Differential Geometry and Tensor Analysis	3+0
QT-301	Translation of the Quran : Moral Values	*1+0
	Total Credit Hours	**17**

Semester-6

Code	Course Title	Cr. Hr.
MTH-307	Partial Differential Equations	3+0
MTH-309	Analytical Mechanics	3+0
MTH-310	Functional Analysis	3+0
MTH-311	Real Analysis –II	3+0
MTH-312	Rings and Fields	3+0
HS-203	Community Service	*1+0
	Total Credit Hours	**15**

Semester-7

Code	Course Title	Cr. Hr.
MTH-401	Calculus of Variations	3+0
MTH-402	Numerical Techniques	3+0
MTH-403	Fluid Mechanics	3+0
MTH-xxx	E-1	3+0
MTH-xxx	E-2	3+0
QT-401	Translation of the Quran : Dealings & Commandments	*1+0
	Total Credit Hours	**18**

Semester-8

Code	Course Title	Cr. Hr.
MTH-404	Integral Equations	3+0
MTH-405	Mathematical Modeling with Applications	3+0
MTH-xxx	Project	3+0
MTH-xxx	E-3	3+0
MTH-xxx	E-4	3+0
	Total Credit Hours	**15**

*Non Credited Course (NC)

Electives Couses

Code	Course Title	Cr. Hr.
MTH-451	Fuzzy Logic	3+0
MTH-452	Advanced Group Theory	3+0
MTH-453	Theory of Modules	3+0
MTH-454	Analytical Dynamics	3+0
MTH-455	Quantum Mechanics	3+0
MTH-456	Algebraic Geometry	3+0
MTH-457	Theory of Manifolds	3+0
MTH-458	Functional Analysis-II	3+0
MTH-459	Operations Research	3+0
MTH-460	Optimization Theory	3+0
MTH-461	Mathematical Modeling & Simulation	3+0
MTH-462	Theory of Elasticity	3+0
MTH-463	Electromagnetism	3+0
MTH-464	Special Theory of Relativity	3+0

Couses Offered to other Departments

Code	Course Title	Cr. Hr.
MT-100	Bascis Mathematics	2+0
MT-101	Calculus and Analytic Geometry	3+0
MT-103	Differential Equations	3+0
MT-104	Linear Algebra and Vector Calculus	2+0
MT-108	Pre-Calculus-I	3+0
MT-109	Pre-Calculus-II	3+0
MT-201	Complex Variables and Transforms	3+0
MT-202	Numerical Methods	2+1
MT-203	Linear Algebra	3+0
MT-204	Multivariable Calculus	3+0
MT-205	Linear Algebra & Differential Equations	3+0
MT-302	Probability and Statistics	3+0
MT-303	Applied Linear Algebra	2+0

BS Statistics

Statistics is a fundamental knowledge that provides skills to the students related with the probability, data analysis, mathematical statistics, and statistical computing. In this recent era the demand of data Science and Analytics has increased substantially. The department of Mathematics is esteemed to offers BS statistics degree program. The emphasis of the

Department to enable the students for the practice of applied statistics in every realm of life today. Areas of employment of the graduate from this program include academia, healthcare sector and applied life science research. BS in Statistics is a four years program under semester system and comprises 132 credit hours. The semester wise breakdown is given as

Semester-1

Code	Course Title	Cr. Hr.
IS-211	Islamic Studies	2+0
HS-101	English	3+0
CS-101	Introduction to Information and Communication Technologies	2+1
STAT-101	Introductory Statistics	3+0
MTH-104	Elements of Set Theory and Mathematical Logic	3+0
MTH-105	Calculus-I	3+0
QT-1	Beliefs	(NC)
	Total Credit Hours	**17**

Semester-2

Code	Course Title	Cr. Hr.
HS-102	Pakistan Studies	2+0
HS-103	Communication Skills	3+0
MTH-107	Linear Algebra	4+0
EC-110	Computing Fundamentals	2+1
MTH-106	Calculus-II	3+0
STAT-102	Introduction to Probability Theory	3+0
	Total Credit Hours	**18**

Semester-3

Code	Course Title	Cr. Hr.
HS-201	Technical Report Writing	3+0
HS-403	Management & Entrepreneurship	3+0
MTH-205	Mathematical Computation with Software Packages	2+1
STAT-201	Introduction to Probability Distributions	3+0
STAT-202	Basic Inferential Statistics-I	3+0
STAT-203	Exploratory Data Analysis & Visualization	3+0
QT-2	Worships	(NC)
	Total Credit Hours	**18**

Semester-4

Code	Course Title	Cr. Hr.
MGT-101	Principles of Management	3+0
HS-404	Foreign Language	1+1
MTH-211	Ordinary Differential Equations-I	3+0
STAT-204	Basic Inferential Statistics-II	3+0
STAT-205	Introduction to Regression Analysis & Experimental Design	3+0
STAT-206	Probability & Probability Distribution-I	3+0
	Total Credit Hours	**17**

Semester-5

Code	Course Title	Cr. Hr.
HS-401	Professional Values & Ethics	2+0
STAT-301	Sampling Techniques-I	3+0
STAT-302	Statistical Inference-I	3+0
STAT-303	Probability & Probability Distribution-II	3+0
STAT-304	Design & Analysis of Experiments-I	3+0
STAT-305	Statistical Packages	3+0
QT-3	Moral Values	(NC)
	Total Credit Hours	**17**

Semester-6

Code	Course Title	Cr. Hr.
STAT-306	Sampling Techniques-II	3+0
STAT-307	Statistical Inference-II	3+0
STAT-308	Design & Analysis of Experiments-II	3+0
STAT-309	Regression Analysis & Econometrics-I	3+0
STAT-310	Software Tools	3+0
	Community Service	0+1NC
	Total Credit Hours	**15**

Semester-7

Code	Course Title	Cr. Hr.
STAT-401	Multivariate Analysis-I	3+0
STAT-402	Regression Analysis & Econometrics-II	3+0
STAT-403	Time Series Analysis & Forecasting (7th)	3+0
STAT-XXX	E-1	3+0
STAT-XXX	E-2	3+0
QT-4	Dealings & Commandments	(NC)
	Total Credit Hours	**15**

Semester-8

Code	Course Title	Cr. Hr.
STAT-404	Multivariate Analysis-II	3+0
STAT-405	Programming Language	3+0
STAT-XXX	Project/E-3	3+0
STAT-XXX	E-4	3+0
STAT-XXX	E-5	3+0
	Total Credit Hours	**15**

Electives Couses

Code	Course Title	Cr. Hr.
MTH-402	Numerical Techniques	3+0
STAT-406	Stochastic Processes	3+0
STAT-407	Bayesian Statistics	3+0
STAT-408	Survival Analysis	3+0
MTH-459	Operations Research	3+0
STAT-409	Bio Statistics	3+0
MTH-461	Mathematical Modeling and Simulation	3+0
STAT-410	Quality Control & Quality Management	3+0
STAT-411	Categorical Data Analysis	3+0
STAT-412	Population Studies	3+0

MS Mathematics

This program requires a coursework of 24 credit hours. 6 additional credit hours are also required to be completed either through research and submission of a thesis and its successful defense or by taking two additional courses in lieu of the thesis. This program imparts specialized knowledge in various areas of Mathematics and exposes the students to latest developments. Special efforts are made to nurture and enhance the research capabilities of students through seminars, workshops and critique sessions. Typical research topics for MS students are Numerical Analysis, Analytical and Numerical techniques for Ordinary & Partial Differential Equations and Finite Element Analysis. Research opportunities are also available in Numerical Linear Algebra, Mechanics of Fluids (Newtonian and Non-Newtonian), Computational Fluid Dynamics, Computational Rheology and Liquid Chromatography.

PhD Mathematics

The Doctor of Philosophy (PhD) in Mathematics is the highest degree awarded by the Department. The program comprises 18 credit hours of course work and 30 credit hours of research thesis. The courses are selected in consultation with the Supervisor. The progress of student is continuously monitored through the Guidance and Evaluation Committee (GEC).

The students eligible for admission in PhD program should possess an MS/MPhil Degree with a minimum CGPA 3 out of 4 and should have passed GAT (Subject) examination as per requirement of HEC, in vogue. The completion of course work is followed by Comprehensive Examination for granting candidacy as a PhD scholar.

The program necessitates two years of residency in HITEC University. The PhD thesis is evaluated by one local and two foreign experts from technologically more advanced countries. As per requirement of the HEC after positive evaluation from these experts, the PhD scholar is required to undertake an open defense to fulfill the degree requirements.

The degree is awarded in recognition of high level of scholarship, the ability to carry out independent research, and the publication of research in national and international journals of repute. The department sponsors research activities involving analytic and numerical solutions of Ordinary & Partial Differential Equations, Finite Element Analysis, Numerical Linear Algebra, Newtonian and Non-Newtonian Fluid Mechanics and Computational Fluid Dynamics etc.

MS/PhD Couses

Code	Course Title	Cr.Hr.
MTH-801	Perturbation Methods-I	3+0
MTH-805	Mathematical Modeling	3+0
MTH-806	Mathematical Essentials for Cryptography	3+0
MTH-807	Relativistic Astrophysics	3+0
MTH-808	Advanced Ordinary Differential Equations with Applications	3+0
MTH-809	Advanced Numerical Analysis	3+0
MTH-810	Numerical Linear Algebra	3+0
MTH-812	Computational Fluid Dynamics	3+0
MTH-815	Boundary Value Problems-I	3+0
MTH-817	Integral Equations and Applications	3+0
MTH-818	Advanced Partial Differential Equations and Applications	3+0
MTH-820	Variational Inequalities and Applications	3+0
MTH-821	Numerical Solution of Partial Differential Equations	3+0
MTH-823	Finite Element Analysis-I	3+0
MTH-824	Advanced Numerical Linear Algebra	3+0
MTH-826	Advanced Mathematical Physics	3+0
MTH-828	Advanced Cryptography	3+0

Code	Course Title	Cr.Hr.
MTH-829	Fractional Calculus & Applications	3+0
MTH-831	Numerical Solution of Boundary Value Problems for ODEs	3+0
MTH-832	Advanced Fluid Mechanics	3+0
MTH-833	Non-Newtonian Fluid Mechanics	3+0
MTH-834	Numerical Optimization & Applications	3+0
MTH-835	Integral Transforms & their Applications	3+0
MTH-836	Turbulence Modeling	3+0
MTH-837	Thermal and Concentration Boundary Layer	3+0
MTH-838	Mathematical Theory of Elastodynamics	3+0
MTH-839	Advanced Numerical Techniques	3+0
MTH-840	Mathematical Theory of Liquid Chromatography	3+0
MTH-841	Statistical Mechanics	3+0
MTH-900	Special Topics	3+0
EM-501	Topics of Engineering for Mathematicians	3+0
MTH-869	Thesis (MS level)	6+0
MTH-886	PhD Thesis	30+0

RELIGIOUS EDUCATION COMPLEX

Dr. Rab Nawaz
Chairperson

Established in 2008, the Department of Islamic Studies envisioned evolving into a center of excellence for producing religious scholars to revitalize the spirit of Islamic thought and scientific query. The curricula and syllabi of Islamic studies are designed to provide in depth knowledge of basic Islamic Sciences such as Al Quran, Al Hadith, Al Fiqh, Islamic history, Islamic thought, Seerah, Islamic culture and Islamic Civilization.

The objective of the program is to provide a thorough understanding of fundamental sources of Islam, to deal with present challenges and to create viable and logical solutions of contemporary problems.

The Department invites students to pursue BS, Master and PhD programs and offers the opportunity to study variety of courses which are aimed at producing researchers capable of dealing with current and futuristic issues.

The Department motivates the students to work for cause of Islam. Our mission is to provide quality education in Islamic thought and culture to preach and propagate Islamic concepts and practices, transcending cultural and geographical boundaries.

The Department helps the students to acquaint themselves with the concept of convergence of Islam and sciences.

Faculty Members

Dr. Rab Nawaz (HEC Approved Supervisor)
Designation: Chairperson/Assistant Professor
Qualification: PhD Tafsir and Quranic Sciences International Islamic University, Islamabad
Area of Interest: Quranic Sciences & Tafsir
Contact: rab.nawaz@hitecuni.edu.pk

Dr. Manzoor Ahmad Alazhari (HEC Approved Supervisor)
Designation: Associate Professor
Qualification: PhD Legal Policy Al-Azhar University, Egypt. Post Doc. University of Oxford, UK
Area of Interest: Islamic Shariah, Law & Economics
Contact: manzoor.ahmad@hitecuni.edu.pk

Dr. FarhadUllah (HEC Approved Supervisor)
Designation: Associate Professor
Qualification: PhD Islamic Studies, University of Peshawar, Peshawar
Area of Interest: Quranic Sciences & Tafsir
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Dr. Ahmad Hassan
Designation: Assistant Professor
Qualification: PhD Islamic Studies, Post Doc. in progress, IIU, Islamabad.
Area of Interest: Seerat & Islamic History
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Dr. Taj Ul Deen Azhari
Designation: Assistant Professor
Qualification: PhD Islamic Studies, Punjab University, Lahore
Area of Interest: Hadith & Hadith Sciences
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Dr. Saeed Ahmad
Designation: Lecturer
Qualification: PhD Islamic Studies, AIOU, Islamabad
Area of Interest: Quranic Sciences & Tafseer
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Dr. Rafi Ullah
Designation: Lecturer
Qualification: PhD Islamic Studies, HITEC University, Taxila
Area of Interest: Maqasid Al-Shariah (Objective of Islamic Shariah
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Mrs. Zahida Jabeen

Designation: Lecturer
Qualification: PhD International Relations in progress NUML Islamabad, M.Phil Peace and Conflict Studies, National Defense University, Islamabad
Area of Interest: Conflict Resolution in South Asia, Foreign Policy Analysis
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Mrs. Ruqya Safder

Designation: Lecturer
Qualification: MS Islamic Studies, PhD in progress, HITEC University, Taxila
Area of Interest: Quranic Sciences & Tafsir
Contact: ruqya.zubair@hitecuni.edu.pk

Mr.Jafar Nazir

Designation: Lecturer
Qualification: M.Phil. Pakistan Studies Quaid_e_Azam University Islamabad
Area of Interest: Governance & Administrative Systems / Patterns in the Different parts of Pakistan
Contact: jafar.nazir@hitecuni.edu.pk

Scheme of Study

Semester-1

Code	Course Title	Cr. Hr.
HS-104	English	3+0
MT-107	Math/Stat-I	3+0
IS-101	Tajwid Quran	3+0
AR-101	Arabic Language	3+0
CS-101	Introduction to Information & Communication Technologies	2+1
	Intermediate English I	*1+0
Total Credit Hours		**15**

Semester-2

Code	Course Title	Cr. Hr.
HS-103	Communication Skills	3+0
IS-102	Quranic Arabic	3+0
IS-103	Study of Sirah of Holy Prophet (PBUH)	3+0
IS-105	Introduction to Logic	3+0
HS-102	Pakistan Studies	2+0
AR-102	Arabic Language II(Comprehension)	3+0
QT-101	Translation of the Quran: Beliefs	*1+0
	Intermediate English II	*1+0
Total Credit Hours		**17**

Semester-3

Code	Course Title	Cr. Hr.
IS-411	Study of Ethics	3+0
AR-201	Arabic Literature	3+0
IS-201	Textual Study of Holy Quran-I	3+0
IS-202	Islamic History	3+0
IS-203	Ulum-al-Quran	3+0
IS-210	Introduction to the selected topics of the Holy Quran	3+0
	Intermediate Pak Studies	*1+0
Total Credit Hours		**18**

Semester-4

Code	Course Title	Cr. Hr.
IS-204	History and Compilation of Hadith	3+0
IS-205	Textual Study of Holy Quran-II	3+0
HS-402	Economics	2+0
IS-206	History of Islamic Law	3+0
IS-208	Al-Da'wah-wal-Irshad	3+0
IS-209	History of Tafsir	3+0
QT -201	Translation of the Quran: Worships	*1+0
Total Credit Hours		**17**

Semester-5

Code	Course Title	Cr. Hr.
IS-301	Textual Study of Quran III	3+0
IS-302	Textual Study of Hadith	3+0
IS-303	Contemporary Muslim World & Movements	3+0
IS-304	Introduction to world Religions	3+0
IS-305	Fiqh al-Quran	3+0
IS-311	Ulum-al-Hadith	3+0
Total Credit Hours		**18**

Semester-6

Code	Course Title	Cr. Hr.
IS-306	Research Writing	3+0
IS-307	Muslim Family Laws	3+0
IS-308	Interfaith Dialogue	3+0
IS-309	Textual Study of Al-fiqh-al-akbar	3+0
IS-310	Study of Islamic Fiqh(Al-Ibadaat)	3+0
IS-313	Comparative study of IHL and Islamic international law	3+0
QT -301	Translation of the Quran: Moral Values	*1+0
Total Credit Hours		**18**

Semester-7

Code	Course Title	Cr. Hr.
IS-401	Islamic Law of Inheritance	3+0
IS-410	Usul-al-Fiqh-al-Islami	3+0
IS-403	Economic system of Islam	3+0
IS-409	Study of Hadith's Text and Orientalists	3+0
IS-402	Quran and Sciences	3+0
IS-404	Research Project	3+0
	Intermediate English I	*1+0
Total Credit Hours		**18**

Semester-8

Code	Course Title	Cr. Hr.
IS-405	Islamic Spirituality	3+0
IS-406	Gender studies and Human Rights	3+0
IS-407	Islam and Modern Political Thought	3+0
IS-408	Islamic History of Sub-Continent	3+0
IS-404	Research Project	3+0
QT -401	Translation of the Quran: Dealings and Commandments	*1+0
Total Credit Hours		**15**

*Non Credited Course (NC)

MS Islamic Studies

The Department offers MS in Islamic Studies; it is a broad based program, focusing on contemporary socio-political and economic issues, Ijtihad, objectives of Islamic Shariah, Islamic philosophy, International relations, Islamic world view and contemporary study of major world religions. Researchers are encouraged to work on practical issues to fulfil the needs of our society in particular and humanity in large. The MS degree is awarded after completion of 30 credit hours, 24 of which are course work. The remaining 6 credit hours can be completed either by writing a research thesis or by taking 2 additional courses from the list of offered subjects in respective semester.

PhD Islamic Studies

The Doctor of Philosophy (Ph.D.) in Islamic Studies is the highest degree awarded by the Department. The program comprises 18 credit hours of course work and

30 credit hours of research thesis. The courses are selected in consultation with the thesis supervisor. The progress of student is continuously monitored through the Guidance and Evaluation Committee (GEC).

The students eligible for admittance in Ph.D. program should possess MS/M.Phil. Degree with a minimum CGPA 3 out of 4 and should have passed GAT subject examination as per requirement of HEC, in vogue.

The completion of course work is followed by comprehensive examination for granting candidacy as a Ph.D. Scholar. The program necessitates two years of residency in HITEC University. The Ph.D. thesis is evaluated by one local and two foreign experts from technologically more advanced countries, as per requirement of the HEC. After positive evaluation from these experts, the Ph.D. Scholar is required to undergo through an open defense to fulfil the degree requirements.

The degree is awarded in recognition of high level of scholarship, the ability to carry out independent research, and the publication of such research in national and international journals of repute. The Department encourages the researchers to work on current problems and futuristic issues related to the renaissance of Islamic thought, philosophy and scientific knowledge, leading to the ultimate truth.

MS/PhD Couses

Code	Course Title	Cr. Hr.
IS-801	Development of Quranic Commentary Literature and its Trends	3+0
IS-802	Diligence in Islam (Ijtihad)	3+0
IS-803	Objectives of Islamic Shariah (Maqasid al-Shariah)	3+0
IS-804	Islamic Thoughts and Sciences: Source Literature	3+0
IS-805	Islamic Philosophy	3+0
IS-806	Contemporary Issues: Islamic View Point	3+0
IS-807	Hadith Studies	3+0
IS-808	Principles of Tafsir	3+0
IS-809	Principles of Hadith	3+0
IS-810	Comparative Study of Tafsir Literature	3+0
IS-811	Principles of Fiqh	3+0
IS-812	Comparative Study of Different Juristic Schools of Thought	3+0

Code	Course Title	Cr. Hr.
IS-813	Islamic Banking and Finance	3+0
IS-814	Management & Administration in Islam	3+0
IS-815	Islamic World View	3+0
IS-816	International Relations and Islam	3+0
IS-817	Comparative Study of Major World Religions	3+0
IS-818	Islam and Science	3+0
IS-819	Research Methodology	3+0
IS-820	Analytical Study of Seerah	3+0
IS-821	Ethics of Disagreement in Islam (Adab al-Ikhtalaf)	3+0
IS-822	Dawah Principles & Techniques	3+0
IS-823	Islamic Economics	3+0
IS-824	Islamic Political System	3+0
IS-886	MS Thesis/Two Courses	6+0

ریلیجس ایجوکیشن کمپلیکس (REC) کا تعارف اور قواعد و ضوابط

1. تعارف

■ مدینۃ العلم تحفیظ القرآن الکریم کا ایک منظم ادارہ REC ہے، جو ہائی ٹیک یونیورسٹی کے شعبہ علوم اسلامیہ کی نگرانی میں کام کر رہا ہے۔ یہ ادارہ 2007 ء میں قائم ہوا اور اب تک دوسرے زائد طلبہ و طالبات نے اس ادارے سے حفظ قرآن کریم کی سعادت حاصل کی۔

■ حفظ کے طلبعلموں کردار سازی اور سیرت کی تعمیر میں مدرس کی شخصیت، فنکر اور تقوٰی کا براہ راست عمل دخل ہوتا ہے اس لیے ضروری ہے کہ تعلیمی، مدرسی، دینی اور اخلاقی تربیت کے لیے کورسز اور ورکشاپس کا اہتمام کیا جائے۔ اس ضرورت کے پیش نظر وقتا فوقتا طلبعلموں اور حفظ کے اساتذہ کی تربیت کے لیے مختلف کورسز کا انعقاد کیا جاتا ہے۔

■ فارغ التحصیل ہونے والے حفظ کے طلبہ و طالبات کو امتحان میں کامیابی کے بعد وفاق المدارس کی سند جاری کی جائے گی۔

2. ریلیجس ایجوکیشن کمپلیکس منتظمین و مدرسین

■ ڈاکٹر رب نواز	صدر شعبہ علوم اسلامیہ و مہتمم REC	
■ ڈاکٹر رفیع اللہ	صدر مدرس REC	
■ میجر (ر) جاوید اقبال درانی	پرنسپل REC	
■ قاری محمد فیاض	موذن	
■ قاری محمد سفیان	مدرس	
■ قاری احمد علی	مدرس	
■ قاری محمد قاسم	مدرس	
■ قاری تیمور خان	مدرس	
■ حافظہ شبانہ اکرم	مدرس	
■ حافظہ ساجدہ اسحاق	مدرس	

3. حفظ قرآن کریم کا دورانیہ اور سمسٹر زکی ترتیب

طلبہ و طالبات کے حفظ قرآن کا دورانیہ 8 سمسٹر پر محیط ہو گا۔ آٹھویں سمسٹر میں گردان یعنی دہرائی کرائی جائے گی تا کہ قرآن کریم پختہ ہو جائے۔ ہر سمسٹر کی مدت 4 ماہ ہوگی۔

پہلا سمسٹر
(قاعدہ مع التجوید، نظرہ قرآن، نماز، کلمے، وضو اور غسل کے فرائض) ۔ ایک پارہ

دوسرا سمسٹر
3 پارے

تیسرا سمسٹر
4 پارے

چوتھا سمسٹر
5 پارے

پانچواں سمسٹر
5 پارے

چھٹا سمسٹر
6 پارے

ساتواں سمسٹر
آخری 6 پارے

Prof. Dr. Tahir Nadeem Malik
Dean

The Directorate of Quality Assurance and Collaborations (QA&C) was established in 2012. Its primary role is to assure quality in synchronism with the Higher Education Commission (HEC) and Pakistan Engineering Council (PEC) guidelines.

The Directorate is also responsible for establishing and monitoring MOUs meant for collaboration with other universities and organizations of repute.

The foremost function of the Directorate is to ensure that teaching, learning and evaluation processes are pursued as per international norms and practices. An extensive system is in place to solicit feedback from the students, faculty and other stake-holders to bring about continual improvement in the quality of education. The feedback also encompasses the quality of administrative support and other allied services available in the University. The accruing data is analyzed in details and short comings are addressed speedily. The Directorate also keeps a record of all the proceedings and furnishes the required information to PEC and HEC on regular basis. This data is also essentially required for accreditation of our academic programs by various regularity bodies.

Outcome Based Education – A Harbinger of Quality

HITEC University has now transformed into an "Outcome Based Education (OBE)" Institute. This shift has added new dimensions to the functions and responsibilities of the Directorate. Therefore, it closely monitors the attainment of "Course Learning Outcomes (CLOs)", "Program Learning Outcomes (PLOs)" and "Program Educational Objectives (PEOs)" quite diligently.

PEOs are those perceived objectives which our Alumni would be pursuing 4-5 years after graduation. It means HITEC University's quality of education assures that our graduates would be proficiently practicing their respective professional activities. OBE philosophy essentially requires that all institutions must clearly formulate their PEOs and evidence should be in place to compute level of attainment of those PEOs through feedback from the alumni and their employers.

The HITEC University has defined the following four PEOs:-

- PEO-1 Our graduates will be proficient engineers in industry, academia or manage self-initiated business activity.

- PEO-2 They will exhibit adaptation to advancements in knowledge for creating solutions of complex problems.

- PEO-3 They will contribute as effective team members and managers in their organizations.

- PEO-4 In dealing with others, they will conduct with dignity, integrity and demonstrate commitment to social responsibilities.

In consonance with the universal practice, the quality of an engineering program must embody the following graduate attributes (also called PLOs). These are:-

- PLO-1 Engineering Knowledge
- PLO-2 Problem Analysis
- PLO-3 Design / Development of Solutions
- PLO-4 Investigation
- PLO-5 Modern Tool Usage
- PLO-6 The Engineer and Society
- PLO-7 Environment and sustainability
- PLO-8 Ethics
- PLO-9 Individual and Team Work
- PLO-10 Communication
- PLO-11 Project Management
- PLO-12 Lifelong Learning

HITEC University ensures that all of its engineering programs must conform to these 12-PLOs.

Measuring the attainment of PLOs is also an essential activity of the directorate of QA&C. Fulfillment of PLOs is dependent on successful achievement of the Course Learning Outcomes (CLOs) meant for each course of study. These are clearly defined goals of every major topic covered in a course.

Foreign Collaborations

The University has very active collaboration with University of Strathclyde, Glasgow, UK, Istanbul Technical University (ITU), Turkey, and Universiti Teknologi Malaysia (UTM).

These collaborations afford unique opportunity for our students and faculty to benefit from the academic programs and R&D activities of these leading universities.

Those students who opt for studies at University of Strathclyde will spend the first 02 years at HITEC University and remaining 02 years at Strathclyde. They will be awarded the degree of Bachelors of Science in Engineering by the Strathclyde University. Our MoU with the Strathclyde University also facilitates HITEC graduates to seek admission in M.Sc. and PhD programs and quite a few of them are already pursuing their postgraduate studies. This collaboration has been highly successful and efforts are in hand to broaden the scope and domain of the existing MoU.

Similarly, our students after completion of 06 semesters at HITEC University can opt for one year exchange program at Istanbul Technical University (ITU) and Universiti Teknologi Malaysia (UTM). They will be awarded HITEC University Degree. The MoU with UTM has propelled HITEC University to be an integral participant of "Asia Technological University Network (ATU-NET) which aims to support member-universities to advance the quality of education and assimilation of international practices. It provides a forum for mutual sharing of ideas and initiatives in academics, research and business development. As of present, ATU-NET comprises prestigious universities of 18 Asian countries.

The Directorate liaises and monitors performance of exchange students who avail this opportunity. Efforts are in hand to establish similar collaborative MOUs with more institutes of repute.

We in HITEC University do not perceive quality assurance as an added one layer activity in our academic programs and services. We do believe and practice "quality assurance" as an integral attribute in all facets of our endeavors and activities

ADMISSIONS

Farrukh Shahzad
Registrar
MBA (International Business), UK
MIT

The Office of the Registrar is the nucleus of the University and coordinates all the activities within and outside the University. It is the custodian of the common seal and academic records of the University. It provides secretariat support to the Board of Governors and the Vice Chancellor. It maintains the register of students and its graduates. This Office is responsible for the admissions, registration, semester enrolments of the students and preparation of degrees for the graduating students. It also maintains record of students, faculty and staff of the University.

The admissions are strictly based on merit. The University is open to all persons without prejudice to gender, religion, race, creed, color or domicile.

Admission is granted on the basis of eligibility criteria. Applicants, who have appeared in a prerequisite examination prescribed for admission in a program and are awaiting results, will be provisionally admitted against an undertaking that they will pass their examination as per admission criteria.

Students awaiting results are required to submit attested copies of their certificates/degrees within two weeks after the declaration of results, failing which the University will cancel their admissions. Only those students will be registered who would complete all admission formalities including deposit of their fees and other dues on prescribed date.

Every undergraduate student shall be expected to take the full load of the courses prescribed for the semester. A master level student, however, will have the option to enroll for fewer courses.

Students applying for graduate programs are required to be qualified as per criteria laid down by HEC.

Eligibility Criteria

BS (Electrical Engineering)
- F Sc/A Level or equivalent with Physics, Chemistry and Mathematics or
- Diploma of Associate Engineers with same/Relevant Technology/Disciplines approved by PEC
- Minimum 60 % marks.

BS (Robotics and Automation)
- Intermediate or equivalent degree
- Physics and Mathematics
- Second Division

BS (Mechanical Engineering)
- F Sc/A Level or equivalent with Physics, Chemistry and Mathematics or
- Diploma of Associate Engineers with same/Relevant Technology/Disciplines approved by PEC
- Minimum 60 % marks.

BS (Computer Engineering)
- F Sc/A Level or equivalent with Physics, Chemistry / Computer Science and Mathematics.
- Diploma of Associate Engineers with same/Relevant Technology/Disciplines approved by PEC
- Minimum 60 % marks.

BS (Internet of Things - IOT)
- F Sc/A Level / DAE
- Minimum 50 % marks.

BS (Civil Engineering)
- F Sc/A Level or equivalent with Physics, Chemistry and Mathematics.
- Diploma of Associate Engineers with same/Relevant Technology/Disciplines approved by PEC
- Minimum 60 % marks

BS (Bio-Medical Engineering)
- F.Sc/A-Level or equivalent with Biology / Mathematics, Chemistry and Physics or

- Diploma of Associate Engineers with same/Relevant Technology/Disciplines approved by PEC
- Minimum 60 % marks.

BS (Computer Sciences / Software Engineering)
- F.Sc Pre-Engineering / Pre-Medical / ICS /A Level or equivalent
- Minimum 50 % marks.

BS (Mathematics)
- Intermediate / equivalent with Mathematics having minimum 50 % marks.
- Diploma of Associate Engineers with minimum 60% marks.

BS (Statistics)
- F.A./ F.Sc./A-Level or equivalen to 12 years' education
- Minimum 45% marks.

BS (Islamic Studies)
- Intermediate / equivalent / Khassa Certificate recognized by HEC.
- Minimum 50 % marks.

BBA (Bachelors in Business Administration)
- Intermediate / equivalent with minimum 50 % marks

BS (Accounting & Finance)
- Intermediate / equivalent with minimum 50 % marks

MS Engineering (Electrical/ Mechanical/ Computer/ Design & Manufacturing)
- BE / BS / BSc Engineering in relevant discipline.
- Minimum CGPA 2.00/4.00 or 50% marks.
- GAT General conducted by NTS / University Admission Test with minimum 50% cumulative score.

MS (Computer Science) / Software Engineering
- BS (Computer Science / Software Engineering),

MCS / MSc Comp Sc.
- Minimum CGPA 2.00/4.00 or 50% marks.
- GAT General conducted by NTS/University Admission Test with minimum 50% cumulative score.

MS (Mathematics)
- BS/M.Sc Mathematics.
- Minimum CGPA 2.00/4.00 or 50% marks.
- GAT General conducted by NTS / University Admission Test with minimum 50% cumulative score.

MS (Islamic Studies)
- MA/BS (Islamic Studies / Shariah / Arabic).
- Dars-e-Nizami from HEC recognized institution with 50% marks.
- Minimum CGPA 2.00/4.00 or 50% marks.
- GAT General conducted by NTS / University Admission Test with minimum 50% cumulative score.

Master of Business Administration (MBA)

Pathway-I (Business Education)
- BBA (Hons), B.Com (Hons), BSc Accounting and finance, CA, ACCA, ACMA, M.Com etc.

Pathway-II (Non-Business Education)
- 16 Years education or MA, MSc, BE, BS, MBBS, B-Phar etc.
- Minimum CGPA 2.00/4.00 or 50% marks.
- GAT General conducted by NTS / University Admission Test with minimum 50% cumulative score.

PhD
- MS / M Phil or equivalent (in relevant discipline) with minimum CGPA 3.00/4.00 from an HEC recognized institution.
- With minimum 70% commulative score.
- GAT Subject Test conducted by NTS with minimum 60 % score.

Admission Test

A written Admission Test is compulsory for admissions in undergraduate engineering programs as advertised in the national press. Candidates having valid results of NAT-IE / IM / ICS / IGS / ICOM / IA / HAT / ECAT result conducted by NTS, HEC and UETs are also eligible to apply.

Admission Test will be held on the prescribed date comprising following pattern:

Engineering

English	20%
Physics	30%
Mathematics	30%
Chemistry	20%

Bio-Medical Engineering

English	20%
Physics	30%
Biology/Mathematics	30%
Chemistry	20%

Computer Engineering

English	20%
Physics	30%
Mathematics	30%
Chemistry/Computer Science	20%

Determination of Merit (Engineering)

The final merit will be determined based on:-

University Admission Test	50%
HSSC Part 1/HSSC or equivalent	30%
SSC / O-level	20%

Announcement of Result

The result will be announced as per given schedule. Complete result will be displayed on the University website. All selected candidates will be informed about their admissions through the Email and SMSs. List of selected candidates will also be displayed at the University Secretariat.

Late Admissions

As a matter of policy, late admissions are not entertained and no deviation is made from the announced schedule. The University reserves the right to reject the application of a student for admission without assigning any reason.

Registration and Enrollment
- On completion of admission formalities including deposit of dues, the applicants will be registered as bonafide students of the University.
- Applicants are required to provide original academic certificates and documents to the Registrar Office at the time of registration.
- After registration, Registrar Office will issue University Registration Card/Identity Card to all students.
- Students are allowed to enroll for the courses offered by their department after getting their Registration Number.
- If a student fails to get himself enrolled for the courses his/her name will be struck off the strength and vacant position will be offered to the next candidate on the waiting list.
- Students must enroll for the courses in each semester within first two weeks of the start of the semester.
- All admissions will be provisional until provision of original documents.

Transfer within HITEC University

We do not encourage shifting students from one discipline to the other. However in extreme circumstances, students can be transferred from one discipline to the other within the same merit or to the discipline with lower merit on their request.

Dates to Remember

Events	Date & Days
Prospectus will available from	Monday **September 19, 2022**
Commencement of Fall Semester 2022	Monday **September 19, 2022**

Contacts

Farrukh Shahzad
Registrar
Office: 051-4908143
Email: registrar@hitecuni.edu.pk

Muhammad Nazim Siddiqui
Deputy Registrar
Office: 051-4908146-49, Ext 364
Email: deputy.registrar@hitecuni.edu.pk

FINANCIAL MATTERS

Ms. Afsheen Zahoor
Treasurer
MBA (FJWU), CMA - Inter (ICMAP)

Treasurer is the Chief Financial Officer of the HITEC University. This office is vested with the responsibility to maintain and prepare the accounts of the University in accordance with the generally accepted accounting practices approved in Pakistan. The management of University assets, liabilities, receipts, expenditures, funds and investments are also at the discretion of this office. The Treasurer Office also ensures utilization of funds according to the budget approved by the Board and performs such functions as assigned by the Board of Governors of the University.

Payment of Dues

1. The Student will be required to register / enroll the courses through portal using their official email address and enroll the course.

2. After the successful enrollment of courses, semester fee voucher will be available for its downloading and printing. The University Fee Voucher will be downloaded by the student through logging into their MIS user ID.

3. The student will print the semester fee voucher and pay the semester fee by the due date at cash counter of any branch of Askari Bank Ltd or Accounts office of HITEC University.

4. All registered students of the University should deposit their semester fee and allied charges in advance on due date before commencement of classes of that semester, thereafter, fine/penalty will be charged as per the University policy.

5. At the time of admission students have to pay the admission & registration fee, security deposit and full semester fee in advance.

6. The Students are to ensure the followings:-

a. Submission of original copy of paid fee voucher to the Treasurer office – Collection section of the University.

b. Submission of the copy of paid fee voucher through whatsapp and email to the following:-

Mobile Number 03155169152

Email address: fee@hitecuni.edu.pk

c. In case the student fails to submit his original copy of paid fee voucher to the account office, his/her name will appear in the list of student with outstanding dues.

Fee Structure

The fee structure for the students registered in the academic year 2022-23 in different disciplines of undergraduate & postgraduates is as under:-

Programs	Admission/Registration Fee (One Time) Non-refundable	Security Deposit (One Time) Refundable	Semester Fee
BS Engineering	Rs. 30,000/-	Rs. 20,000/-	Rs. 121,000/-
BS Robotics & Automation	Rs. 30,000/-	Rs. 20,000/-	Rs. 70,000/-
BS Computer Sciences/ Software Engineering	Rs. 30,000/-	Rs. 20,000/-	Rs. 89,000/-
BS IOT (Internet of Things)	Rs. 30,000/-	Rs. 20,000/-	Rs. 70,000/-
BS Mathematics	Rs.20,000/-	Rs.15,000/-	Rs. 55,000/-
BBA / BS Accounting & Finance	Rs. 20,000/-	Rs. 15,000/-	Rs. 82,000/-
BS Statistics	Rs. 20,000/-	Rs. 15,000/-	Rs. 40,000/-
BS Islamic Studies	Rs. 20,000/-	Rs. 15,000/-	Rs. 33,000/-
MBA	Rs. 20,000/-	Rs. 15,000/-	Rs. 90,000/-
MS Engineering	Rs. 20,000/-	Rs. 15,000/-	Rs. 7,000/- per cr.hr.
MS Mathematics	Rs. 20,000/-	Rs. 15,000/-	Rs. 7,000/- per cr.hr.
MS Computer Sciences	Rs. 20,000/-	Rs. 15,000/-	Rs. 7,000/- per cr.hr.
MS Islamic Studies	Rs. 20,000/-	Rs. 15,000/-	Rs. 4,500/- per cr.hr.
PhD	Rs. 20,000/-	Rs. 15,000/-	Rs. 7,000/- per cr.hr.
MS - Thesis Supervisory and Evaluation Charges			Rs. 25,000/-
PhD-Thesis Supervisory and Evaluation Charges			Rs. 35,000/-

Note

1. Tax will be applicable on the Fees as per Government rules. Taxable Fee as per Section 236(I)of the Income Tax Ordinance 2001 includes Semester Fee and all charges received by the educational institutions, by whatever name called, excluding the amount which is refundable. Summer semester fee, Additional Course fee, Hostel and Transport charges are all taxable.

2. All fees are subject to revision.

Fee Refund Policy

The candidate /student who applies for cancellation of admission will be refunded tuition fee according to the HEC Policy letter No. 10-1/HEC/A&C/2012/94 dated 11th September, 2012.

Undergraduate Program	
Timeline	**% age of Tuition Fee**
Up to 7th day of commencement of Classes	Full (100%) Fee Refund
From 8th-15th day of commencement of Classes	Half (50%) Fee Refund
From 16th day of commencement of Classes	No Fee Refund
Postgraduate Program	
Timeline	**% age of Tuition Fee**
Up to 14th day after Commencement of Classes	Full (100%) Fee Refund
After 14th Day of Commencement of Classes	No Fee Refund

1. % age of Tuition Fee shall be applicable on semester tuition fee only.

2. Admission Fee is non refundable.

3. Timeline shall be calculated continuously, covering both weekdays and weekends.

4. University will not accept any claim of security deposit refund after 4 years of the completion of degree / withdrawl from University and the amount of security deposit will be transferred to the **HITEC University Fund.**

Fines/Penalties on Late Payments

In case the student fails to deposit the semester fee within the due dates, he/she will allowed to deposit the fee within first two week after the commencement of semester along with the late payment fine as the per the following:-

Undergraduate Program	
After the expiry of one week i.e., 8th day of the commencement of the semester.	Fine @ 5% of the total semester fee
After the expiry of two weeks i.e., 15th day of the commencement of the semester	Fine @ 10% of total semester fee
On the 15th day from the start of semester	Suspension from the University rolls.

1. For re-activation/restoring of registration of the student by the department within first four weeks of the semester, the student will be required to pay Rs. 5,000/- of reinstatement fee along with all outstanding charges and fines.

2. The enrollment will be closed as per the deadlines notified for Fall and Spring semester i.e., two days (first week of September for Fall Semester) and two days (last week of January for Spring Semester) and the students who fails to enroll / deposit will not be allowed to continue his /her studies in the semester.

3. In any case the student will not be able to attend classes till clearance of dues.

4. Timeline shall be calculated continuously, covering both weekdays and weekends.

Accommodation

On-campus hostel accommodation is available (for boys) on first come first served basis. The Charges for Accommodation per semester to be deposited before the start of each semester.

Hostel Security (Refundable)	**Rs. 15,000/-**
Hostel Charges Per Semester	**Rs, 45,000/-**

1. The candidate /student who applies for cancellation of Hostel accommodation will be refunded according to Refund policy of UG and PG programs.

Deadline	Amount of Hostel Charges Refund
Before first day of the Commencement of classes	100%
After the Commencement of classes	Non-Refundable
100% Security fee will be refunded	

2. Timeline shall be calculated continuously, covering both weekdays and weekends.

Transport

Transport facility is available for Islamabad & Rawalpindi areas only on first come first served basis. Transport charges are per semester to be deposited before the start of each semester.

Transport Charges Per Semester	**Rs. 30,000/-**

1. The candidate /student who applies for cancellation of transportation facility will be refunded according to following refund policy.

Deadline	Amount of Transport Charges Refund
Before first day of the Commencement of classes	100%
After the Commencement of classes	Non-Refundable

2. Timeline shall be calculated continuously, covering both weekdays and weekends.

Concession, Financial Assistance & Scholarship

Financial Assistance & Scholarship Categories	Criteria
1st Semester Merit List Positions	50% tuition fee waiver for 1st semester only
China North Industries Corporation NORINCO Scholarship	Awarded to position holders of Electrical and Mechanical Engineering Programs per semester. Minimum GPA requirement is 3.50
HITEC University Merit/Position Holder Scholarship	Awarded to position holders of all programs per semester. Minimum GPA requirement is 3.50
Financial Assistance on Need Cum Merit Basis	Awarded to eligible candidates as per policy, subject to a minimum of 2.5 GPA
Muhammad Nusrat Scholarship Program	Awarded to eligible deserving candidates as per policy
Begum Razia Sultana Scholarship Program	Awarded to eligible deserving candidates as per policy
Thinker's Forum Pakistan Scholarship Program	Awarded on performance basis to deserving students
Ihsan Trust Qarz -e-Hasna Scheme	Available to eligible candidates in collaboration with "Ihsan Trust" of Meezan Bank Ltd
Top 25 Board Position Holders	100% tuition fee waiver provided to students. Minimum GPA requirement of 3.50 in each semester
Scholarship to Haffaz	Awarded to eligible candidates as per policy
HIT Wards Fee Concession	Awarded to eligible wards of HIT employees as per policy
HITEC University Wards Fee Concession	Awarded to eligible wards of as per policy
Fee Concession to Graduates of HITEC College	Awarded to the students of HITEC College as per the policy

Miscellaneous Charges

Description	Amount/Rates
Course Repeat Fee/Additional Course/Summer Semester Fee	Rs. 7,000/- per credit hour
Semester Freeze Fee	• 25% per semester (UG) • Rs. 10,000/- per semester (PG)
Migration Fee	25% of semester fee for each exempted semester
Transcript Fee/ Semester	Rs. 500/- Normal (7 working days) & Rs. 1,500/- Urgent (3 working days)
Degree Fee(Before Convocation)	Rs. 3,000/- Normal (7 working days)& Rs. 5,000/- Urgent (3 working days)
Additional Grade Report Including Attestation	Rs. 300/- per semester
Recalculation Fee	Rs. 1,000/- per subject
Attestation	Rs. 100 per document
Duplicate Admit Card	Rs. 200/-
Verification Fee	Rs.1,500/- Local Rs.5,000/- Overseas
Convocation Charges *	Rs. 10,000/-(will be deducted from the security deposit)

* University will not accept any claim of refund after 4 years of the completion of degree / withdrawn from University and the amount of Convocation Charges will be transferred to the HITEC University Fund.

Contacts

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Engineer Iftikhar Rehman
Controller of Examinations

The Office of the Controller of Examinations is responsible for all the examination matters and ensures that the examinations are held in free and fair environment. It is also responsible to notify the date sheet, appoint the supervisory staff and issue admit cards to the students in end semester examination. The Office maintains strict secrecy of all information regarding examination matters, notifies the semester and other results. Assist the IT Department to prepare semester grade reports available to students on University website. The Office also maintains entire examination records of the students, issues interim/final transcript(s) and other certificates.

The HITEC University Taxila follows semester system, quite akin to that in vogue in American universities. Singular features of this system are highly focused well delivered classroom lectures, extensive experimentation and continuous assessment of students' performance. It aims to infuse habits of regularity and competitiveness amongst the students.

Definition of various terms applicable to our system and a summary of regulations are given below. Please do take few minutes to peruse through them.

Academic Calendar

It consists of two regular and a Summer Semester. Duration of regular semesters is nineteen weeks each which includes sixteen weeks of teaching and three weeks of examinations. The Summer Semester (conducted for undergraduate programs only) is condensed to eight weeks duration, but the credit hours taught for a course are equal to a regular semester. The schedule of semesters for the year 2022-2023 is:-

Fall Semester 2022
September 19, 2022 - January 27, 2023
Spring Semester 2023
February 13, 2023 - June 16, 2023
Summer Semester 2023
June 19, 2023 - August 25, 2023

Contact Hour

One hour including ten minutes break spent on academic and research related activities including instructional work/tutorials, laboratory work (practical), research work, projects, seminars, workshops, internships, etc during the course of studies at the University.

Credit Course

A course of which enrolment and successful completion is a mandatory requirement for the award of degree.

Credit Hour (Cr Hr)

A lecture of one hour duration (including ten minutes break) delivered per week per semester for a course countable towards a student's Cumulative Grade Point Average. However, in case of seminars, tutorials and laboratory work (practical), one credit hour may require two or three contact hours depending upon the nature of the subject.

Grading System

The performance of each student in a course of study is based on relative grading system except otherwise mentioned. The grades and grade points in case of relative grading are as follows:-

GRADE	GRADE POINT
A	4.00
A-	3.67
B+	3.33
B	3.00
B-	2.67
C+	2.33
*C	2.00*
C-	1.67
D	1.00
F	0.00
I	Incomplete

(* Lowest grade in case of Graduate Programs)

Note: In all cases of project, thesis, dissertation evaluation and where the class strength is 10 or less students, the performance will be based on the marks obtained by a student and the grades and grade points will be as follows:-

MARKS	GRADE	GRADE POINT
90-100	A	4.00
85-89	A-	3.67
80-84	B+	3.33
75-79	B	3.00
70-74	B-	2.67
65-69	C+	2.33
60-64	*C	2.00*
55-59	C-	1.67
50-54	D	1.00
less than 50	F	0.00
-	I	Incomplete

(*Lowest grade in case of Graduate Programs

Award of Grade 'F'

In addition to 'F' grade awarded on the basis of academic failure, a student shall not be allowed to appear in end semester examination of a subject in which his/her attendance is less than 75%, and he/she shall be awarded 'F' grade in that subject. The 'F' grade so obtained shall only be cleared by repeating the same course whenever offered. If student misses his

her end term examination paper he she will awarded 'F' grade in particular course.

Award of Grade 'I'

A student, who, because of illness or other acceptable reason(s) approved by the Departmental Board of Studies/ Board of Faculty, fails to appear in end semester examination, provided his/her overall attendance is not less than 75%, is given 'I' as a grade. The student receiving such a grade makes up the unfinished portion of his course and is given a grade at the discretion of the faculty without prejudice to the previous grade 'I'. In case the student fails to make up the course work, he/ she receives a grade 'F' unless further extension is given by the Board of Faculty. He/she shall pay the prescribed fee for re-appearing in the end semester paper. Following procedure should be adopted to remove 'I' grade:-

- **Sessional Examinations.** Whenever a student misses sessional examination due to reasons acceptable to Departmental Board of Studies, make up test shall be arranged within the period to be decided by the Departmental Board of Studies but not later than four weeks from original date of missed sessional examination. Makeup test for Mid-term examination of two hours duration (only for lab courses) will also be governed accordingly.

- **End Semester Examination.** Whenever a student misses end semester examination due to reasons acceptable to the Departmental Board of Studies, make up examination shall be arranged within first six weeks afte semester.

Attendance Rule

A student shall not be allowed to appear in end semester examination of a subject in which his/her attendance is less than 75%, and he/she shall be awarded 'F' grade.

Cumulative Grade Point Average (CGPA)

The summation of grade points of all credit courses divided by the total number of credit hours taken by a student, i.e.

$$CGPA = \frac{\text{Sum of (PxN)}}{\text{Sum of N}}$$

Where 'P' represents grade point assigned to a letter grade scored by the student in a course and N represents the number of credit hours associated with the course. In short it is the ratio of total grade points earned in all the courses to the total number of credit hours of those courses.

Semester Grade Point Average (GPA)

The summation of grade points of the particular semester credit courses divided by the total number of credit hours taken by a student in that semester, i.e.

$$GPA = \frac{\text{Sum of (PxN) of a semester}}{\text{Sum of 'N' of that semester}}$$

where 'P' represents grade point assigned to a letter grade scored by the student in a course and N represents the number of credit hours associated with that course. Here numerator is the summation of grade points earned in a semester and denominator is the summation of credit hours attended in that semester.

Repetition of Course(s)

A student can repeat a course to obtain minimum CGPA laid down for the prescribed program or to improve the CGPA. It is the responsibility of the student to clear the failed course(s) or improve CGPA

by applying (subject to course offering) to the respective chairperson and get the approval to repeat the course. While repeating a course, a student will undergo all the formalities applicable to regular semester i.e. pay the fee, attend the classes and appear in the quizzes, assignments, projects, practical examination, sessional examinations and end semester examination as planned for the course. During Summer Semester a maximum of 'B' grade shall be awarded.

Opting to repeat a course(s) a student shall not be eligible for top honors/awards even if he/she improves and obtains equal or better CGPA. The student transcript shall show both old and new earned grades, but the CGPA shall be based on better earned grade. Apart from clearance of 'F' grade an undergraduate student can repeat a maximum of six courses and graduate student can repeat a maximum of two courses.

Semester Freeze

Based on the positive recommendation of the Chairperson of the Department/ College/ Institution; semester freeze up to one year from course work is allowed to students facing acute domestic problems or on other valid reason(s). During semester freeze period an undergraduate and a graduate student shall pay the laid down fee to continue his/her registration with the University. Prior to resumption of studies after the semester freeze, it shall be mandatory to clear all the previous outstanding dues, if any. Freezing of first semester is not allowed.

Final Grade

The grade earned by a student in home assignments, quizzes, case studies, viva voce, practical/laboratory

work, sessional examinations, end semester examination and projects etc, are formalized into final result by the concerned faculty member. All the examination answer books/sheets including end semester examination are marked and shown to the students. The marks obtained by the student in each examination are also displayed on notice boards at least one week prior to commencement of end semester examinations. The faculty members prepare the final results of the students on the award list in duplicate and submit it to the Departmental Board of Studies. The award list of each course duly approved by the Departmental Board of Studies is then sent to the Office of the Controller of Examinations.

Recalculation/Change of Grade

There shall be no re-evaluation of answer scripts of the end semester examination. However, a candidate shall be allowed to have his/her answer scripts rechecked by the Controller of Examinations on payment of prescribed fee within 30 days of the declaration of the result. The Dean of the Faculty concerned, on the recommendation of the concerned Chairperson, may condone the delay up to a maximum period of 15 days on payment of double fee. The Controller of Examinations and a faculty member of the concerned department shall check the answer scripts of the end semester examination of the applicant and satisfy themselves regarding following aspects and certify that:-

- The script belongs to the applicant and that it has not been changed.

- No portion of the script has been left unmarked.

- The marks awarded in the script have been correctly brought out/ reproduced on its cover.

- The grand total on the cover of the script is correct.
- The grand total on the cover of the script is correctly transferred to the award list.
- The result has been correctly posted and notified.

Change in Pre-End Semester Examination Result(s)

After notification/declaration of final results by the Controller of Examinations, pre-end semester examination results will not be changed e.g. quizzes, assignments, sessional examinations or any other activity which was assigned

marks. Only the application(s) raising query in final paper will be accepted. Student(s) seeking change/rectification of pre-end semester examination results due to erroneous entry of marks by the concerned faculty member will be admitted and processed through Chairperson of concerned Departments/Institutes/ Colleges.

Medium of Instruction

The medium of instruction will be English except where permitted by the competent authority.

Semester Enrolment

Enrolment in each regular and Summer Semester is mandatory for every student. List of enrolled students will be notified by the Registrar Office within first two weeks of commencement of each semester and Controller of Examinations shall publish results on the basis of that list. Enrolment forms are available with each Department and if a student fails to enroll for the semester, his/her name will be struck off the university rolls and will be included in the list of suspended students. The registration will be restored

after paying the laid down fee and the fine imposed as per rules.

Course Add/Drop

Undergraduate Programs

A student, if allowed to enroll in additional course(s) in a regular semester or during Summer Semester, can add or drop a course(s) on the basis of conflict in weekly program or on personal grounds within first two weeks of commencement of semester. In this case fee will not be charged, nor will the result be announced. In all other situations a student is liable to pay the fee and his/her result will also be announced.

Graduate Program

A student can apply and get approval by the respective Chairperson of department/ school/institution, to add or drop course(s) due to conflict in weekly program or on personal grounds within first two weeks of commencement of regular semester. In this case fee will not be charged, nor will the result be announced. In case a student applies for dropping a course(s) within two weeks after first sessional examination, fee will be charged, but the result will not be announced. In all other situations a student is liable to pay the fee and his/her result will also be announced.

Semester Credit Load

In every semester, undergraduate students must enroll in all the courses prescribed for that semester (as specified in the road map of the Program). The academic load in each semester ranges from fifteen to eighteen credit hours for undergraduate, maximum twelve credit hours for MS and nine credit hours for PhD Programs. In Summer Semester, an

undergraduate student can enroll in the number of courses not exceeding nine credit hours.

Academic Performance Evaluation

The students are evaluated as per following criteria:-
- Quizzes
- Home Assignments
- Case Studies/Seminars/Workshops
- Practical/Laboratory Tests
- Project
- Internship
- Viva Voce
- Sessional Examinations
- End Semester Examination

UNDERGRADUATE PROGRAMS
Academic Deficiencie

Conditions

A student who obtains one or more of the following grades in a regular semester final result is considered academically deficient, namely:-
- 'F' grade in any subject.
- First Semester GPA is less than 2.00.
- CGPA less than 2.00.
- 'I' (Incomplete) grade in any course.

The Academic Deficiencies are:-

- **Probation**

  Probation means that a student is deficient in academic standards and is either likely to be withdrawn from the program.

- **Relegation**

  Relegation means that the student is asked to join the next junior class when recommended by the Board of Faculty. It can be on at own request, medical or disciplinary grounds.

- **Withdrawal**

  Withdrawal means that a student is considered unsuitable for further studies and shall be deregistered from University rolls.

Disposal of Academically Deficient Students

Probation

A student is placed on academic probation if:-

- CGPA is below 2.00 and this clause will not be applicable in first semester.

Relegation

A student is relegated under any of the following conditions:-
- On medical or disciplinary grounds
- Own request

Withdrawal

A student is withdrawn from the University subject to any of the conditions listed below:-

- Fails to achieve CGPA of 2.00 or does not clear "F" grade on completion of 7 years of education from the date of registration.
- Fails in all the courses in first semester.
- Earn five consecutive probations.
- On disciplinary grounds when recommended by the respective Discipline Committee and approved by the VC.

Duration

Minimum period for completion of undergraduate program(s) is four years and maximum period shall be seven years.

Award of Degree

HITEC University, awards undergraduate degree to the

students who satisfy the following conditions:-

- Have completed the minimum credit hours as per approval of PEC/HEC for each program
- Have achieved a minimum CGPA of 2.00
- Have no unclear 'F' grade and
- Have cleared all dues

GRADUATE PROGRAMS

Masters' Program(s)

Academic Deficiencies

A student shall be dropped from the Masters' program if a student:-

- Fails in more than one course in course work
- Fails to clear the F grade
- CGPA remains below 2.50 after completion of course work even after availing repetition of courses allowed under the rules
- CGPA less than 2.50
- 'I' (Incomplete) grade in any course.

Disposal of Academically Deficient Students

The cases are disposed off by the Board of Faculty on the recommendation of Departmental Board of Studies. The Board may award one of the following:-

- Probation
- Withdrawal

Probation

- **Definition**

  Probation means that a student is deficient in academic standards and is likely to be withdrawn from the program.

- **Policy.** Board of Faculty shall recommend and place a student on academic probation under any of the following conditions if the:-

- CGPA is equal to 2.00 or above and less than 2.50 at the end of a semester

- Student fails in a subject.

Withdrawal

- **Definition.** "Withdrawal" means that a student is considered unsuitable for further studies and shall be struck off the University rolls.

- **Policy.** Board of Faculty shall recommend and place a student on academic probation under any of the following conditions if the:-

- First semester GPA is below 2.00

- Fails more than once in course work

- CGPA remains below 2.50 after completion of the course work even after availing the chances allowed under the provision of regulation "Repetition of Course".

Transfer of Credits

Course credits may be transferred from other local accredited or foreign HEC recognized institution(s), if they are relevant and appropriate to a Master's program in a discipline approved by the University. Following shall be applicable:-

- Only the course(s) with 'B' grade, equivalent or higher shall be considered for transfer

- The candidate will have to complete the program in the stipulated time as laid down by the HEC/

University, and it shall include the time already spent in the previous institution

- A maximum of 12 Cr Hrs earned in the previousinstitution can be transferred to HITEC University; and

- The transfer of credits is subject to acceptance by the concerned Departmental Board of Studies.

- Admission by migration shall not be allowed after expiry of three weeks of commencement of classes/ semester.

- Migration shall not be allowed from affiliated colleges or institutes.

- The student should be passing in all the subjects and achieved a minimum CGPA of 3.00 out of 4.00.

Improvement of CGPA

Before opting for thesis work or two additional courses in lieu for MS thesis work, a student may repeat only two courses having grade point of less than 3.00. Procedure for repeating the course(s) shall be as under:-

- The candidate shall apply to the Chairperson for permission to repeat the course.

- The student shall have to pay the prescribed tuition fee for the repeated course. The transcript shall show both the old grade and the new earned grade but the CGPA shall be based on the better grade

- The student shall have to repeat the course within the time limit given by the supervisor.

- In addition to clearance of the 'F' grade, a student shall be allowed to repeat a maximum of two courses only during his/her entire coursework.

- Course replacement will only be allowed in case the same is not being offered and time to complete the program is short.

Duration

Minimum period for completion of MS program shall be one and a half years and maximum period shall be four years.

Appointment of Supervisor

On the written request of the student, the Chairperson with the approval of the concerned Dean of faculty will send the case for formal notification.

Change of Supervisor

Under special circumstances, a student can request change of MS supervisor. It will be allowed by the Chairperson in consultation with the concerned Dean and approval of the Vice Chancellor.

Co-Supervisor / Co-Advisor

If required, a PhD qualified faculty / specialist from industry or an R&D organization (in a specific field in which requisite expertise/facilities are not available within the university) may be appointed. The co-supervisor/ co-advisor shall assist in supervision/guidance of thesis of MS student till completion of research work. The co-supervisor/co-advisor must have sufficient experience and relevant qualification in the field of research.

Appointment of External Examiner

- Will be nominated from the list of local external examiners as suggested from time to time by the Departmental Board of Studies and approved by the Board of Faculty.
- The supervisor shall suggest a panel of at least three external local examiners in order of priority from the approved list. The Dean shall appoint one external local examiner from the suggested panel to evaluate the Thesis.

Submission of Thesis

The candidate shall be eligible to submit the thesis, provided the course work formalities have been completed. The thesis should be written in English language except where recommended by the Chairpersons and allowed by the VC.

Research during Master Program

The procedure for thesis research shall be as under:

- All students must successfully complete a minimum of 6 credit hours in Master's thesis.
- Subject of research shall be agreed to by the student and the research Supervisor/Advisor (thesis advisor). The research must not be plagiarized.
- Thesis shall be graded and will be counted towards calculation of CGPA for all programs.
- Change in the area of research, once it has been finalized, will be discouraged. However, if it becomes inevitable, then the matter will be discussed in Departmental Board of Studies. After detailed deliberations, the Board will forward its recommendations to the Dean for approval.

Evaluation of Thesis

- The Thesis will be sent for evaluation to one local (external) expert.
- Final presentation of Thesis will be given after obtaining positive evaluation report by the local (external) expert.
- The expert shall submit his/her report to the Controller of Examinations.
- In case, the expert asks for a resubmission, the candidate will be asked to work on the Thesis for a maximum period of six months before submitting it for re-evaluation.

- The Thesis shall be resubmitted after incorporating revisions and suggested changes.
- First resubmission may be allowed at least three months after intimation to the concerned supervisor.
- Third resubmission is not allowed and the candidate shall be declared fail.
- Chairperson of the concerned department will be responsible to arrange the open defence of the Thesis.

Change of External Expert

- In case, the expert fails to respond within two weeks, a new expert shall be recommended to the Dean.
- In case, the second expert does not respond within two weeks, a new panel of two experts shall be recommended to the Dean.

Submission of Final Thesis

The thesis submitted by Masters 'candidate shall comply with the following conditions:-

- This thesis should exhibit literature research, application of well proven knowledge and its simulation or practical implementation in creating a solution.
- It shall not include research work for which a degree has already been conferred in this or any other university.
- Initially, the candidate shall submit two spiral bound copies of completed thesis along with an application on prescribed form, duly recommended by the Supervisor and the Chairman of the Department to the Controller of Examinations for evaluation.

- At final submission four hard bound copies of Thesis having a soft copy on CD, will be prepared for submitting of one copy to the University, one copy for the Department, one copy for the Supervisor and one copy for the student.

Award of Degree

The University, on recommendations of Board of Faculty, shall award Masters' degree to the students who satisfy the following conditions:-

- **Course Work**

  The minimum course work required shall be 24 credit hours or as approved by HEC for each program of masters' degree.

- **Research Work**

  In addition to the course work, all students should either enroll for 6 Cr Hrs of research thesis or two additional courses of 3 Cr Hrs each to complete the program.

- **Successful Thesis Defence**

  After completing the thesis the open defence will be held and student will defend his/her thesis.

- The Vice Chancellor may approve the recommendations of the Board of Faculty on behalf of the Board of Governors regarding the award of Masters' degree to the candidate(s).

- **Other Conditions**
  Should have:-

- Achieved a minimum CGPA of 2.50.

- No unclear 'F' grade(s)

- Cleared all dues.

Fee and Other Dues

Each student shall be required to pay tuition fee and such other charges as may be prescribed from time to time.

Plagiarism Test

Plagiarism test must be conducted on the thesis before its submission to external expert or as applicable by the QAC.

PhD Program(s)

Academic Deficiencies

A student shall be dropped from the PhD degree program if the student:-

- Receives 'F' grade in more than one course.

- Fails to clear the F grade after repeating the course.

- On completion of course work and even after availing the chances for improvement of grades, the CGPA remains below 3.00

- Fails twice in the comprehensive examination.

- On disciplinary grounds when recommended by the Discipline Committee.

- Other conditions are also applicable as mentioned in the academic regulations of this University.

- Fails to pass comprehensive examinations within first two years after admissions.

Improvement of CGPA

Before taking the comprehensive examination, a student may repeat only two courses having grade point average of less than 3.00.

Procedure for repeating the course(s) shall be as under:-

- The candidate shall apply to the Chairperson for permission to repeat a course. The Chairperson, in consultation with the Supervisor, may permit the student to repeat the course, subject to its offering.

- The transcript shall show both the old and the new earned grades but the CGPA shall be based on the better grade.

- The student shall have to repeat the course within the time limit given by the supervisor.

- In addition to clearance of the 'F' grade, a student shall be allowed to repeat a maximum of two courses only during his/her entire PhD coursework.

Confirmation of Admission

- After successful completion of graduate level courses or equivalent (as described by HEC) with a minimum CGPA of 3.00 out of 4.00, a student shall take a comprehensive examination consisting of written and oral components.

- The comprehensive examination should be conducted as soon as possible after the completion of course. The pass percentage for oral examination would be 60%. Students have to pass each paper with atleast 40% & overall 60%. A Department shall normally hold at least one comprehensive examination in an academic year which shall be conducted by the PhD Examination Committee approved by the VC on the recommendations of the Chairperson of the Department and Dean of the Faculty concerned in consultation with the Supervisor.

- The Supervisor of the student will be the Chairman of this Committee.

- A maximum of two chances will be available for clearing the comprehensive examination.

- The registration of a PhD student shall be cancelled if he/she does not pass the comprehensive examination even in the second attempt.

- Within one year of passing the comprehensive examination, the student with the guidance of supervisor will submit a synopsis of the proposed research topic for the approval of Board of Advanced Studies and Research.

- On approval of synopsis of the proposed research topic by Board of Advanced Studies and Research, the admission of the candidate to PhD program will be confirmed.v

- Failure to present the research proposal within the specified time may result in cancellation of admission of the candidate.

Appointment of Supervisor

Board of Advanced Studies and Research will appoint a supervisor from the relevant field as proposed and approve the field of research/title on the recommendation of the Department concerned.

Appointment of Guidance and Evaluation Committee

A doctoral GEC shall be formed at the earliest after the acceptance of an applicant into PhD Program, within a month after the appointment of supervisor. The Chairperson in consultation with the student and his supervisor and also with the approval of Dean shall appoint the Committee. The student's supervisor shall chair the Committee. GEC shall comprise of minimum three PhD members including the supervisor, one member from the department and one external member from a reputed national university or research organization/relevant industry. One additional member (if required) can be from other department of the HITEC University keeping in view the research topic and expertise of the faculty.

Proposal Defence

There shall be a proposal defense of PhD scholar before the GEC within 6 months after passing the Comprehensive Examination.

Appointment of a Co-Supervisor

A co-supervisor, if required, will be appointed with the mutual consent of student, supervisor, Department Chairperson and Dean. A co-supervisor should be a PhD, and shall be either from another department within HITEC University or outside the university/research organization.

Medium of Instructions

The medium of instructions, writing and examination shall be English unless otherwise approved by the VC.

Progress Reports

- The Supervisor of a PhD student shall submit a detailed report to the BAS&R by 30th June and

31st December each year on the progress of the student.

- In the absence of Supervisor, progress report will be submitted by the Chairman of the Department concerned.

- In case of two consecutive unsatisfactory reports by the Supervisor, the case will be recommended to BAS&R for cancellation of admission.

Change of Supervisor/Topic

- Any subsequent changes in the proposal will be forwarded to BAS&R through concerned Department and Dean.

- Request for change in PhD supervisor or if a supervisor opts to withdraw from supervision of a candidate will be sent to BAS&R for approval, through the Chairperson of concerned department.

- No relaxation in the completion time will be granted on this basis.

- The request for change of supervisor and topic is allowed once during entire PhD program.

Duration

- Minimum period for completion of PhD program shall be three years whereas the maximum period shall be eight years and shall include two years of residency.

- During residency, the University staff(s) selected to undergo the PhD program shall temporarily discontinue teaching (for residency period only) and will be paid scholarship/stipend as applicable/ authorized from time to time.

Research Publication

Each PhD researcher shall be required to publish at least one research paper as its first author during his or

 her doctoral studies in an HEC approved Y category (or above) journal for award of PhD degree.

Appointment of External Examiners

- Standing list of local external and foreign examiners suggested from time to time by the Departmental Board of Studies/Board of Faculty concerned and approved by the Board of Advanced Studies and Research will be maintained by each Department.

- The Supervisor shall suggest a panel of external examiner(s) from the approved list.

- The VC in consultation with Dean external / local examiners from the suggested panel to evaluate the dissertation.

- Dissertation must be evaluated by external expert(s) as per guidelines of HEC, received from time to time.

Plagiarism Test

Plagiarism Test must be conducted on the dissertation before its submission to foreign and local experts by the QAC.

Evaluation of Research Dissertation

- The dissertation will be sent for evaluation to experts from technologically/academically advanced foreign countries and local experts (external).

- Final presentation of dissertation will be given after obtaining positive evaluation report by the experts.

- Each expert shall submit his/her report to the Controller of Examinations.

- In case of rejection by one of the expert, the dissertation will be sent to the expert from the originally proposed panel for obtaining the final opinion.

- In case, if two of the experts ask for a resubmission, the candidate will be asked to work on the dissertation for a maximum period of six months before submitting it for re-evaluation.

- The dissertation shall be resubmitted after incorporating revisions and changes suggested by expert(s).

- Re-submission may be allowed at least three months after intimation to the concerned supervisor.

Interpretation of Reports

- If dissertation is approved by the examiners, the Dean shall allow the candidate to defend the dissertation in open defence.

- If any of the examiners suggests modification/revision of the dissertation, the candidate shall be required to resubmit a revised version of the dissertation, duly certified by the Supervisor, within one year.

- The revised dissertation shall be approved by the

same examiner.

- Minor modifications will be incorporated without referring again to the examiner.

Evaluation Process if External Examiners Fail to Respond

- In case, one of the experts fails to respond within three months, the dissertation would be sent to the next expert and likewise to the expert(s).

- If the leftover experts fail to respond in time new panel of experts shall be recommended by the supervisor for approval of the competent authority.

- The process would be repeated if the evaluation report(s) has/have not been received within timeline as decided by the competent authority.

Defence of Dissertation

- The Supervisor, after receiving experts unanimous positive opinion, will confirm to Controller of Examinations that all requirements of the program have been met successfully for the conduct of Dissertation defence.

- The Dissertation defence shall be conducted by the panel of examiners consisting of local examiners (who had reviewed the dissertation), members of the GEC (including the supervisor) and the Chairperson of the Department. All members of panel of examiners, well before the date of open defence, shall have complete access to the dissertation and the report(s) of external examiner(s). In case of non availability of a local external examiner (who had reviewed the dissertation), another local external examiner (as already suggested in the panel of external examiners) will be appointed by the VC in consultation with Dean.

- The Controller of Examinations will notify the date and place for holding the open defence.

- Prior to candidate's presentation, the Supervisor will introduce the student.

- Th⋯ of the research work.

- For maximum participation, the schedule of open defence of the Dissertation by the candidate shall be announced at least four weeks prior to its conduct.

- The Dissertation defence shall be open to the public but the evaluation will be done by the panel of examiners.

- Consequent to the open defence, the panel of examiners will give its decision by a majority vote.

Submission of Dissertation

The dissertation submitted by PhD candidate shall comply with the following conditions:-

- It shall form a distinct contribution to knowledge and afford evidence of originality, shown by the discovery of new facts, by the exercise of independent critical judgment, and/by the invention of new methods of investigation.

- It shall not include research work for which a degree has already been conferred in this or any other university.

- Initially, the candidate shall submit four spiral bound copies of completed dissertation along with an application on prescribed form, duly recommended by the supervisor and the Chairman of the Department to the CoE, for evaluation of dissertation.

- At final submission six hard bound copies of dissertation with a soft copy each on CD, will be prepared for submitting of three copies to the University (out of which one set will be sent to HEC), one copy for the Department, one copy for the Supervisor, one for Library and one student copy.

Award of PhD Degree

HITEC University, on recommendations of Board of Advance Studies and Research (BAS&R) shall award degree of Doctor of Philosophy (PhD) in the relevant discipline to the students who satisfy the following conditions:-

- **Course Work/Residency**

  The student shall complete his/her course work as per guidelines of HEC and two years of Residency. Only relevant graduate level courses or equivalent shall be counted towards the total course work requirements of PhD.

- **Research Work**

  In addition to the course work, all students must register for 30 Credit Hours of doctoral research and volume of research work to be determined by the Supervisor.

- Passes Dissertation defence.

- The VC may approve the recommendations of the Board of Advanced Studies and Research on behalf of the Board of Governors regarding the award of PhD degree to the candidate.

Code of Ethics

- The candidate or his/her spouse or his/her relatives shall not communicate with external examiner(s) directly or indirectly.

- Any faculty member of the department shall not participate in the PhD process of a candidate at any stage, if the candidate is his/her blood relation or spouse or the faculty member is a candidate himself.

- External examiners may not be co-author of any publication with the candidate or his/her spouse or blood relative or supervisor.

Contacts

Engr. Iftikhar Rehman	Mr. Danish Ali Khan Tanoli
Controller of Examinations	Assistant Controller of Examinations
Office: 051-4908146-9 Ext.304	Office: 051-4908146-9 Ext.365
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Major (R) Wasim Ahmed
MBA (COL), MA (IR), SCM (Qualified)

Office of the Manager Administration is responsible for taking progressive measures to provide excellent facilities to the university students, faculty members, officers, and staff. This office manages the University security, transport, maintenance, procurement, and development of infrastructure of the University.

The experienced and qualified administrative team looks after all the necessary arrangements required for the on-going activities at the campus. The office ensures the availability of a proper, clean and green environment. Furthermore, the provision of filtered drinking water, uninterrupted power supply, air-conditioned, heated, safe and secure building, classrooms and offices is also ensured. Moreover, this office also extends any services required for the arrangement of events and central university functions like Convocations, Olympiads, Student evenings and national and international conferences.

Building and Works

The office also monitors all types of procurements of stores, equipment, furniture and fixture. The office also oversees the progress of all types of new construction and renovation. Similarly, safety and security of buildings, students and employees is also ensured by a vigilant and well coordinated team work.

Transport

The office ensures efficient functioning of the University transport vehicles, consisting of buses, vans and pickups for daily transportation of students from the twin cities, Taxila and surroundings at nominal charges. The transport operates on two different routes. Route-1 covers Islamabad whereas; Route-2 facilitates students coming from Rawalpindi. Local transport is also available for students living near the University area. The University is also in the process of purchasing a new vehicle to make the transport facility better and more comfortable for students. In case of any query or complaint please do not hesitate to contact on the following numbers and e-mail address.

Security

The campus is guarded by fool-proof and round-the-clock-indigenous security services through active and vigilant security guards, fenced boundary walls, and CCTV cameras to ensure a safe environment for students, faculty members, officers, staff and other visitors.

Miscellaneous Services

- **Stationery & Photocopy Shop**; It is located in a purpose-built building called RUMI block to ensure availability of learning material; internet facility, photocopier and stationery items besides secretarial facility to students, faculty and staff.

- **Cafeterias;** Two cafeterias are located in RUMI Block, which have been purposefully constructed to cater for the needs of student with hygienic food at very economical rates.

- **Horticulture;** The office also looks after the beautification and embellishment of the campus. An on campus nursery, which provides both ever green and seasonal plants, has also been established. It helps to keep the entire campus, lawns, grounds and green belts well maintained and environment friendly. A well knit water feeding system is also available to provide water to the fountains, waterfalls and green belts.

- **Janitorial Services;** A well trained team of male and female staff is employed to clean University campus. Janitorial staff keeps buildings, office spaces, auditorium, grounds/ physical activities and open areas clean and in good condition. The basic function of staff is cleaning floors, rooms including dust mopping, sweeping, vacuuming, dusting, picking up larger objects off the floor, and spot cleaning glass and windows.

Contacts

Manager Administration: 0320 5500620
MTO: 0302 8506582
m.admin@hitecuni.edu.pk

Muhammad Talha Asghar
Assistant Professor / Acting Director Student Affairs
M.S (Electrical Engineering),
COMSATS, Islamabad

Student Affairs Office is responsible for all co-curricular and extra-curricular activities of the students in the campus by providing them with various opportunities for their overall grooming and development. This office provides a variety of services and also looks after the overall discipline and welfare of the students, besides organizing student activities within and outside the **University campus.**

Student Affairs Office also aims to cultivate and enhance students potential in sports, literature, music, culture, arts, entrepreneurship and community development programs. The office maintains a close liaison with various industries and organizations for student projects, industrial visits, placement and internship programs besides arranging Inter University Events (Olympiad), Open House, Job Fair, Excursion Trips, etc.

Jinnah & Nusrat Hostels

A fully functional hostel facility is available at the campus to accommodate approx. four hundred students. Jinnah Hostel, a purpose built facility can accommodate two hundred and eighty eight students, whereas, Nusrat Hostel can accommodate more than hundred students. Fully furnished, well ventilated and airy rooms with allied facilities are provided to the students at very reasonable rates. This hostel complex offers indoor games, indoor gymnasium, TV room and a mosque for the students and faculty of the University. Similarly, an exclusive limited hostel facility is also available for girl students in HITEC administered girl's hostel.

Swimming Pool

An all-weather indoor swimming pool provides good leisure time activity to the students. The water of the swimming pool is changed regularly and great attention is paid to maintain excellent hygienic conditions. Students can avail this facility at nominal charges.

Stadium

University stadium comprises of a laser levelled cricket ground with International standard cricket pitch along with a football and hockey ground that provides an opportunity for students to practice their sports potential to the full. The grounds are also used by HEC to conduct national level events.

The lush green premises also aim to establish an athletic track around this ground to complete the periphery of the stadium in due course of time. Surrounded in the east and south by lush green Margalla mountain range, the stadium is also equipped with a net practice area for cricket with cemented pitch, a volleyball court and futsal facility.

Gymnasium

"Healthy body keeps a healthy mind". A state of the art gym is present in HITEC sports complex. Students are encouraged to keep themselves fit and use the gym facilities during their spare time. Separate timings have been laid down for the male and female students to avail this facility. An additional facility of Aerobic Centre is also available for the students who are interested to learn the art of aerobics. Anohter state of the art gym facility is present in HITEC Hostel for resident students and faculty.

Nusrat Auditorium

Air-conditioned "Nusrat Auditorium" having a seating capacity for 400 persons and equipped with the latest multimedia/public address system is available for organizing different kind of activities. Student societies arrange their functions and activities like declamation contests, dramas, skits, ramp walk, musical, technical & scientific exhibitions in Nusrat Auditorium.

Iqbal Auditorium

An excellent state of the art facility is also available for holding of Conferences and Seminars with seating capacity of 200 in the Iqbal auditorium.

Societies

Seven different societies are present to look after various interests of students. These are managed by Student Office Bearers (Presidents, Vice Presidents, Secretaries, Joint Secretary and Treasurer) under the supervision of appointed faculty heads. The Student Affairs Office holds the annual student body selection & elections, every year.

Literary Society

This society provides a learning atmosphere and encourages students to undertake literary activities. It holds Inter Department and Inter University debates/declamation contests and also forms part of the Editorial Board of the University Magazine. Every year a debating competition "Pukaar" is launched on Olympiad along with Model United Nations Event called HITMUN.

Creative Art Society

The society makes efforts in promoting artistic talents of the students. It holds art competitions, variety shows and other cultural events. It also arranges art and craft exhibitions, funfairs and musical programs.

Adventure & Social Welfare Society

The society endeavors to create awareness of environmental issues among the students and undertakes cleanliness drives, tree plantation drives within and outside the University. It organizes different types of social events to inculcate the spirit of social services, volunteerism and patriotism, among students. The society also organizes student excursion trips, trekking and paragliding activities for the students.

Sports Society

The society promotes sports activities among students by holding Inter Departmental sports competitions and encourages students to participate in all Inter University competitions. Basketball, football, cricket, hockey, volleyball, badminton and table tennis matches are held quite frequently.

Science Society

This society provides a forum to enhance the scientific knowledge of the students. It organizes Inter University project competitions/exhibitions and arranges quiz competitions, conferences and seminars, etc.

This society also collaborates with other professional and technical student bodies like IEEE, ASHRAE, ASME, SMEP, etc and provides students with assistance as and when required by them.

Character Building Society

The society has been entrusted with the responsibility to create awareness about importance of character and good working atmosphere through lectures, discussions and essay writing competitions, etc. It inculcates moral and ethical values among students.

Girls Society

Girls Society in HITEC University aims to develop leadership skills in girl students and provides them with equal opportunities to compete in various extra & co-curricular activities without any inhibition. Every year this society also partners with Pink Ribbon in its endeavors to spread awareness campaigns for girls related health issues.

Financial Assistance

There are several Financial Assistance Programs in the University and Student Affairs Office provides support to the departments during scholarship processing for need-cum-merit based scholarships. These programs are funded either by the University or by other organizations. Currently the Scholarships available are Razia Sultana Scholarship, University Financial Assistance Program based on Need cum Merit scholarship applicable from 2nd Semester, Abdul Mateen Ansari Scholarship, etc.

In each semester, University allocates and distributes a large amount of financial assistance to help needy and deserving students on need cum merit basis. In addition to that, all Huffaz students are entitled to receive stipend of Rs. 1000/- per month. Another loaning facility is also available under Ihsan Trust Program by Meezan Bank of Pakistan where interest free loans are provided by the bank for a limited number of students.

Student Counseling

Student Affairs Office is also responsible to promptly resolve any personal or collective problems faced by the students through personal counseling besides arranging for a professional help from trained medical practitioner from HIT Hospital Facility. A Psychologist visit the University on regular basis for psychological counseling of the needy students.

Open House (Job Fair)

To help students and alumni explore and make successful career choices, this Office assists the employers and the employees in meeting each other in the "Open House" every year, which is attended by a large number of executives of industries and organizations. It also ensures personal and professional development of the students.

Community Service

In order to generate a sense of ownership among the students for our community in general and societal responsibilities in particular, a community service program supervised by the Student Affairs office in collaboration with departmental Community Service rep is also a regular feature at the Institute. Community Service is declared mandatory for undergrad program. Under this program multiple projects like assistance to nearby schools in villages have been carried out. However, now the projects have shifted towards the UN specified Sustainable Development Goals and projects like rain water harvesting, poverty elimination and sustainability of the University with respect to waste management & environment.

Alumni & Placement Cell.

Alumni is an integral part of any University and HITEC University also has a functional Alumni Body that is elected for a period of three years on biannual basis. This cell keeps a record of all HITEC graduates and facilitate their link with the University current students for training, skill development, motivational speaking and knowledge sharing activities.

This cell aims to expose HITEC graduating students to the latest skill sets and practices in the Industry as well through a series of activities to prepare our students with the challenges of professional life. This academia-industry platform provides a bridge for graduating students with the Industry professionals that would eventually benefit the students for their suitable placements after graduation. Currently the department facilitates on campus job interviews and tests and aims to enhance this activity to meaningful placement of our graduates in a timely manner. A monthly lecture series titled "Window to Industry" is held to support this liaison by inviting professionals from all walks of life to share their expertise and experiences with the students.

There are two additional Groups established to further the work of this cell namely the Career Counselors group with faculty from each department carrying forward the task of preparing the students for upcoming interviews and testing skills besides guiding the students for future endeavors. The other group is to give support to the Industry Internships program that internally coordinates with the Industry Liaison Officers from each department and work together with placement to strengthen Internship bridge of finding good reputable companies to send HITEC Interns and then monitoring their performance during their time of service to the organization being assigned. This add on support to the students is likely to build meaningful channels for suitable placement opportunities in respective organizations.

Dress Code – Students*

Sober and decent clothing is required to be worn in summers and winters according to the religious, cultural and social norms of the country.

Boys:

Summers:

Formal trousers, dress pants and plain blue colored jeans along with dress shirts, T-shirts and closed shoes can be worn. Shorts and sleeveless shirts are not allowed besides trousers/jeans and shirts may not be ripped or contain indecent graphic images or text. Shalwar qameez with waist coat along with sandals can be worn on Fridays.

Winters:

Blazers, jersey, coat, jackets, scarves can be worn while shawls are not allowed for boys.

Girls:

Summers:

Shalwar qameez, trousers and jeans are allowed with scarf, dupatta or abaya. Length of shirts should be knee length while short length kurtis, sleeveless, tights, T-shirts, heavy makeup, jewellery and pencil heals are not allowed. Dress should not be revealing, ripped or carry indecent graphics or text. Appropriate closed shoes should be worn.

Winters:

Blazers jersey, coat, jackets, scarves and shawls can be worn.

Note:

a. Display of University student ID cards during University working hours is mandatory.

b. Violation of dress code is Subject to fine.

Student Achievements in Inter-Univeristy Competitions

Students of HITEC University being exceptionally talented in various dimensions are always very keen to participate in inter university events/competitions. Some of these competitions in which our students won top positions during last few years are as follows:

Patari Talent Hunt at Islamabad in January 2020

1st position in "Singing Competition"

Magnovita'19, Wah Engineering College, Wah Cantt

1st position in "Photography (Portrait & Landscape), Winner in "100M Race, 1st position in the series of modules of "Stick Bridge", "Eifle Tower" and "Paper Plane", 1st in "Scavenger Hunt, Won the technical events of "Scrap Tech" and "Water Rocket", 1st position in "Egg Drop Competition, Winner of "Line Following, Won the competitions of "Poster Designing" and "Design IT (Autocad).

GTV Ramzan Transmission 2019

1st position in "Quiz Competition"

EME Olympiad19 at NUST College of EME Rawalpindi.

1st position in "Declamation Contest", "Snooker", "Tekken", "Egg Drop Competition" & "Integration Bee" competitions, "Minute to Win It", "Crime Scene Investigation", "Bridge Building", "Theme Photography" and "Logo Designing".

TECHFEST & RENAISSANCE'19 at GIKI, Swabi

1st Position in "3D Modeling", "The Rorschach Dilemma", "Speed Coding", Debating Competition & "Medium Independent Power Transmission".

IST Youth Carnival'19 at IST, Islamabad.

1st position in "On-Spot Fast Film", "Wind Mill Challenge", "Gravity Vehicle Competition", "Short Film Competition" and "Singing Competition".

Air Nexus'19 at Air University, Islamabad

Declared first in competitions of "Wall Graffiti", "Bait Bazi", and "Call of Duty".

FUUAST Innovatia'19 at FUUAST, Islamabad

Declared as runner up Champion University

1st position in "Drama Competition", "Project Exhibition", "Bait Bazi" & "Poetry", "Need for Speed", "Photography (Portrait)", "Photography (Landscape)", "Videography", "Egg Drop Competition", "Knockout Warrior", "TechnoBuzz", "PUBG", "Bridge Making", and "Scavenger Hunt".

Sports Week'19 at UET, Taxila

1st position in "Futsal".

FUUAST Innovatia'18 at FUUAST, Islamabad

Declared as Champion University 2018

1st positions in "Speed Wiring Competition", "Digital Logic Design", "Proteus Circuit Design", "RC Car", "Need for Speed", "Fifa'14", "Call of Duty'4" & "Selfie Competition, "Urdu & English Declamation" and "Poetry".

SZABIST, Islamabad, 2018.

1st Position in Declamation Contests

Government College University, Jhang, 2018

1st position in "All Punjab Sultan Bahu Declamation Contest 2018"

NAB Declamation Contest 2018" at NAB Islamabad Headquarter

Won the title of "Best Urdu Speaker.

Wah Educational Expo'18 at University of Wah, Wah Cantt

1st position in "Speech Competition"

2nd All Pakistan Declamation Contest 2018 at Air University

1st Position

All Pakistan IEEE Student Congress 2018 (PSYWSC'18)" organized by PIEAS, Islamabad

Winner in "YP TISP Session

IMEC'19 at GIKI

1st Position in "Scavenger Hunt"

HITEC Olympiad

HITEC University started an Interuniversity competition in year 2015 by the name "HITEC Olympiad", with 22 events participated by 24 Universities. Every year the popularity of the Olympiad increased and the last Olympiad hosted by HITEC in year 2020 was attended by 50 Universities in 58 different modules.

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HITEC University Library forms an essential complement of academic pursuits of our faculty and students. The Library provides access to materials and information resources which will help you in your studies. All new students are offered an orientation tour of the Library.

The Library is located in the basement of "Masjid-e-Noor", a hallmark of the HITEC and housed in the precincts of our Religious Education Center. It is open till late night from Monday to Friday and also functions occasionally on weekends. The Library is fully automated with electromagnetic security system and a Library Management System (LibMax). Online Public Access Catalog (OPAC) is also available to users. It helps the speedy search of a particular title. Full contents of University Library books and HEC Digital Library can be viewed from any faculty office directly. The Library complies with "Dewey Decimal Classification" System and "Library of Congress Subject Headings (LCSH)"

tools. It also provides scanning, photocopying, and WIFI facilities to all users.

Besides hosting a repository of over thirty-three thousand books covering not only Electrical, Mechanical, Civil, Biomedical, Software, Computer Engineering and Computer Science domains, but Humanities, Management Sciences, Statistics, Physics, Islamic Studies, and a unique collection of titles in Advanced Mathematics as well. It subscribes to printed and online versions of professional journals covering the requirements of Engineering & Sciences Departments and also provides access to various databases.

Our students and faculty also enjoy access to HEC provided journals and magazines. Similarly, its audio-visual collection comprises more than sixteen thousand items, including presentation slides, e-Books, and dissertations, etc. A student is permitted to draw a maximum of 7 books, at a time, for a loan period of two weeks.

Our staff, well qualified in Library Sciences, is always at hand to provide the requisite help in searching and locating resources, information, and referral services you may need.

INFORMATION
TECHNOLOGY SERVICES

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The purpose of IT Services is to create a digital campus in which students and staff can be as creative and productive as possible as they learn, teach, undertake research and run the routine activities. Our students have grown up with internet technologies and expect to be constantly connected, using their mobile devices. A technology rich experience is what they expect from University life. Our researchers produce a magnitude of data and need tools to manage, and generate information from it. Similarly, many of them also collaborate with others beyond disciplinary and organizational boundaries.

Moreover, some of our services are also typical of the corporate sector and hence offer similar challenges: managed PCs and laptops, storage, email, printing, web content management, data and voice networking, multimedia design and production, and the enterprise business applications underpinning HR/ payroll facilities management and a range of commercial enterprises.

Furthermore, some services are University specific and create an interesting range of challenges for the IT function. Here the creation, sharing, analysis and dissemination of information are defining activities. Both students and researchers tend to be demanding, being innovative users of technology and so we aim to provide them an information environment in which they can be as creative and productive as possible.

Application Services

These services comprise e-learning, web designing, digital library system, admission system, online attendance system, and Microsoft Imagine that support technical education by providing access to Microsoft software for learning, teaching and research purposes. This ensures that classrooms have access to the latest cutting-edge technologies and software trends.

Campus Management System (CMS)

IT department has all processing capabilities to meet educational needs such as online admissions, semester registrations, student fees, class attendance, student evaluations (assignments, quizzes, Sessional exams, final exam etc.), result compilation and generation of transcripts and degrees.

Architecture, Security and Intrusion Detection

IT, being a vital feature provides the required level of security and intrusion detection by using modern security appliances and devices. The network team of IT department provides services on open-source IDS to secure HITEC University core network from internal and external attacks. IT department also provides IT and management supports for file servers, domain controller, network management, Wi-Fi connectivity.

Servers

The university has 12 servers that include open-source proxy servers, contingent proxy server, LMS (Moodle) server, CMS server, domain controller (centralized administration), file server, Fedena (payrolls system) server, cluster server up to 48 cores, news server, web server, and backup domain controller server.

Equipment

The university routers are configured with OSPF algorithm along with ACL configuration. Manageable layer 2 switches are used for VLAN and broadcast segmentation. Sangfor

F-5200 firewall is also used for campus network security. University network space currently has 3000 active users.

Internet

A high-speed Internet connection of 100 Mbps dedicated bandwidth is available for students and faculty members for 24 hours a day and 7 days a week. The bandwidth of 750 KB is allotted to each student for downloading software from the Internet. Wi-Fi hotspots are also available to the students and faculty throughout the university.

PERN

The Pakistan Education and Research Network (PERN) from the HEC connects HITEC University with other research institutes through high-speed internet bandwidth. The main purpose of this network is to facilitate researchers for sharing their results and to coordinate with each other though video conferencing.

Data Center

The Data Center provides private cloud and cluster services to facilitate deployment of applications without the cost and complexity of buying and managing the under-lying hardware and software layers.

Library Automation

A Gigabyte optical fiber cable connects the library with the university data center. Library is fully automated by EM system and library management system that provide facilities like log in and check out for borrowing and returning library books. Library of the university is connected with the HEC digital library through public IP network for providing access to the large number of journals and other research material at national and international level.

Online Education Setup

The university provides an official email accounts to all students and alumni via G-suite education membership which includes official Mail, 5TB of space on Google Drive, Classroom, Google Meet, Docs, Sheets, Slides, Sites, Calendar and one-on-one support from Google for an online Education purpose. Since, the world has now completely shifted to online education system hence to ensure its complete and satisfactory implementation; innovative measures are being taken by institution very effectively. The core focus of introducing Google classrooms for online teaching is to ensure timely collaboration and interaction among students and teachers. The productive communication helps in boosting cognition and perspectives of students. A well-organized virtual classroom helps in giving same environment as of a physical classroom which motivates students to work hard and respond back with punctuality. Institution has been keeping an eye over every step and leaving no stone unturned to bring best to the surface, not for students only, but for institution as well.

High Level Design — HITEC University Taxila network diagram showing PERN ISP 100 Mbps, PERN Router, WAN Switch, Load Balancer, SANGFOR Firewall, DMZ Switch, Server Farm (DHCP Server, DNS Server, File Server, MIS Server, FTP Server, VSphere Server, Opac Library Server, Fedena Server), Layer 3 Switch, Fiber Link, Distribution Switches, UBNT AP, End Users — Jinnah Hostel, Nusrat Hostel, Israr Block, Library, Secretrate Building. Design By: Network Administrator