UNIVERSITY OF ENGINEERING AND TECHNOLOGY • LAHORE •

READ IN THE NAME OF THY LORD WHO CREATES

Grafton College

Prospectus

www.graftoncollege.edu.pk

Overview:

Grafton College is dedicated to the provision of a first class learning experience that will equip the students with the skills, ability and knowledge to successfully compete in their chosen disci - pline. It is located in the dedicated educational zone of Islamabad at Park road Chack Shahzad Islamabad, It is an integrated and purpose specific building, housing educational institutes, catering for Computer Science and Electrical Engineering education.

The College started its operation in 2011 and got recognition by Higher Education Commission of Pakistan in the same year. Initially the College got affiliated with National University of Modern Languages (NUML) in undergraduate level programmes and the first batch for these programmes was inducted in 2013. A number of batches joined the college for undergraduate programme and have graduated. In 2019, the College got affiliated with one of the leading Engi - neering University of Pakistan i.e. University of Engineering and Technology (UET), Lahore and the first batch joined the college the same year.

The College has a dynamic, industrious and highly committed full time faculty which keeps abreast with the latest developments in teaching methodologies. The College has spacious, air-conditioned and very well equipped class rooms, laboratories, library, auditorium and excel - lent allied facilities. Library provides ample space for books, readings and research activities. Students get abundant opportunities for internship and employment due to close collaboration with certain renowned organizations including PTCL, PAEC, etc.

The institute besides imparting quality education, this college assigns equal importance to character building, extra and co-curricular activities as well. We aim to make our students mor - ally and physically sound individuals and responsible citizens of Pakistan, with a strong urge to serve humanity.

Board of Governors

Mr. Saeed Ur Rehman | Chairman
Chairman Grafton College Islamabad

Air Vice Marshal (R) Aftab Hussain, H I (M) | Member
Grafton College, Islamabad.

Mr. Abdul Waheed | Member
Chief Executive Officer Grafton College, Islamabad.

Mr. Rahim Bakhsh Channa | Member
Ex-Director General, HEC, Islamabad.

Air Cdre (R) Waseem Mehdi, S I (M) | Chairman
Principal, Grafton College, Islamabad.

Colonel Dr. (R) Tahir Ejaz | Secretary
Associate Dean, Grafton College, Islamabad.

Vision

"To be a distinguished seat of learning imbuing global attributes of knowledge"

Mission

"To be a globally recognized educational and research institute for producing competent professionals with human values and ethics to serve the society through involvement in academic, scientific, technological, industrial and entrepreneurship activities"

How to reach Grafton College Islamabad?

Located at the heart of Islamabad, Grafton College is easily accessible by various means of transport. The Campus **is situated in Zone 4 (a dedicated educational Zone by the Government of Pakistan), 8 miles from the Houses of** Parliament, as well as 5 miles away from the Islamabad Club.

Content

Message From The
Chairman
BOARD OF GOVERNORS

It gives me an immense pleasure to welcome the students at Grafton College, Islamabad. Grafton College opened its Islamabad campus in 2011. This highly modern and spacious building was purposely designed for comfortable and quality education in Pakistan. Faculty of Grafton College is highly intellectual, innovative and full of innovative ideas, which adds to the special character of this institution. We have Electrical Engineering and Computer Science Programmes affiliated with University of Engineering and Technology, Lahore Pakistan.

At the same time, Grafton College also offers internationally recognized qualification through Pearson (UK). Grafton College is legally recognized by Higher Education Commission of Pakistan and Pakistan Engineering Council. Your professional career is built through the development of knowledge, skills and professional ethics. Our purpose built building, well equipped labs, extra-curricular facilities and comfortable learning environment ensures the deliverance of quality education in Islamabad.

Saeed Ur Rehman
Chairman Board of Governors
Grafton College

Message From The
Principal

It gives me an immense pleasure and privilege to be part of an institution that is endowed with a strategic vision of promoting higher education and serving Pakistan by nurturing its human capital. We have picked up the mission of conveying the conceptual education coupled up with the personality grooming on the basis of core-values like perseverance, cognition and honesty. And for this we provide the right mix of faculty, resources, environment and technology so that both learners and teachers are inspired to create, to explore, to discover and to lead.

Believing in academic diversity, Grafton College entails knowledge hubs that cater to students from diverse backgrounds including; Management Sciences, Electrical Engineering, and Software Engineering. Scholarships in varying categories including merit, need based and indigent groups are offered to the students. Grafton College is also in a contract with Pakistan Air Force for the provision of 220 seats in various programs to the wards of PAF. An MOU to this effect was signed with Pakistan Air force on 29th April, 2015.

Grafton College welcomes all applicants without any consideration to gender, race, creed, faith or age, following the principle of non-discrimination. At the same time, students are also given the opportunity to participate in a whole range of sports. The array of academic and non-academic activities is geared towards producing intellectually mature, physically healthy and highly responsible future leaders.

We look forward all-willing to join us on this journey.

Waseem Mehdi
Air Commodore (Retired)

Message From The
Associate Dean
Academics

Faculty of Engineering Science comprises two departments i.e., Department of Electrical Engineering and Department of Software Engineering & Computer Science. These departments are offering BSc programs in their respective areas, under the affiliation of University of Engineering and Technology (UET), Lahore. As per the development plan of the college, new programs will also be added to the faculty. We follow the Semester System of education and our bachelors programs are duly accredited and recognized by the relevant governing and professional bodies like the Pakistan Engineering Council (PEC) and Higher Education Commission (HEC). Our programs strictly adhere to the guidelines of the regulatory bodies so as to impart quality education to our students. We follow Outcome Based Education (OBE) system of education and assessment, under the world renowned Washington Accord, in our engineering program. This further enhances the quality and standard of education, increases and facilitates the mobility of our graduate engineers all over the world. Our highly qualified, professionally competent, research oriented and experienced faculty members ensure effective and outcome based teaching, research and development, as per the set standards and objectives of PEC, HEC and OBE of the Washington Accord. Besides keeping themselves abreast with the latest developments in knowledge of their respective domains, the faculty members actively participate in the R&D activities. This incites new ideas and innovative thinking to guide our students in their research and its practical implementation. The minimum qualification for teaching undergraduate classes is an MS / M Phil degree in the relevant field. Our students undertake research projects and actively participate in various curricular, co-curricular and extra-curricular activities and competitions, organized by Grafton College and other institutions of the country and win laurels. The associate dean academics is committed to facilitate the faculty members for acquiring funding from national and international agencies, participating in national and international conferences and in publication of their research in high impact factor journals. Similarly, commercializing the research in collaboration with industry and in doing pragmatic research in the context of Pakistan's socio-economic needs, under the umbrella of ORIC is also accorded top priority. Grafton College has signed memorandum of understanding with leading institutions to undertake joint research, extra- and co-curricular activities. These have been initiated with the objective to boost and enrich research, educational and social environment at national and international levels.

Dr. Tahir Ejaz
Colonel (Retired) Associate Dean Academics

Introduction

Grafton College organization was established in 2004 and work on Grafton College Islamabad was completed at premier educational location on Park Road, Islamabad in 2011. One can witness the magnificent building which is seven story high and built with UK standards. About 150,000 sqf covered area is divided into two wings dedicated to different academic departments for each group of students. It is highly experienced group in providing a quality education and professional training recognized in Pakistan.

High quality and well equipped laboratories are established in each department. Central Library and mosque are located in the centre of the building. The building is centrally air conditioned for comfort and better learning environment. Two high level internet connections are also available for students and college laboratories. Grafton College always strives for high quality and recognized education. Our educational programmes are recognized by Higher Education Commission and Pakistan Engineering Council etc. and degrees are awarded by the parent university, i.e., NUML, Islamabad and UET, Lahore. In addition to well recognized educational programs in Pakistan, Grafton College offers internationally recognized qualifications in business, accounting, teaching and computer. These Programs are examined and certified by world's largest and well recognized body "Pearson" (www.edexcelonline.com). These qualifications are well respected in England, USA, Canada and Australia etc. Please visit our website (www.graftoncollege.edu.pk), admissions@graftoncollege.edu.pk or drop in to meet our education counselor for a personal guidance for these programs. Since Grafton College Islamabad is an affiliated campus, all academic rules and regulations of the parent universities are being followed for respective programmes.

In nutshell, Grafton College is dedicated to high standard education local and international qualifications. It is available in Islamabad and students can get better education at an affordable cost at its robust and state of the art building.

Life At Grafton College Islamabad

21 st Century Learning Technologies

The College believes in keeping pace with new technological developments .We are enthusiastic to providing the latest study aids to our students. Our students have access to Moodle (Modular Object Oriented Dynamic Learning Environment Manage - ment System). Moodle is unique software that allows students to access lectures and other course related resources online. Students can keep track of submission dates and submit course work online on time and even access it from home.

They can participate into important discussions with other users. The System is designed to give students complete control over their learning environment by giving them complete access to everything they need to do well in their respective Programme of study.

State of the Art Resources

Grafton College occupies a spacious area of over three acres in zone 4 a special dedicated area for educational institutions by CDA.

The building inhabits 7 floors covering a total of 150,000sq feet area. The premises are fully air conditioned equipped with solar power provision.

There are numerous modern classrooms and lecture halls. The classrooms are equipped with multimedia projectors and computer systems. There are student's common areas for relaxation and group study. High Tech computer labs enables students to access the internet at high speed, helping in their study and in research. Moreover, the building benefits from double glazed windows, contributing to less use of energy thus caring for the environment. There is a modern cafeteria where students can socialize during their breaks or free time and get necessary food/snacks.

Programmes Offered

B.Sc.
Electrical Engineering

B.Sc. *(Hons)*
Computer Science

Message by the
Head of Department

The electrical engineering department at Grafton College is offering Bachelors of Engineering programme in affiliation with UET Lahore and accredited by PEC. The department aims to produce excellent engineers who can serve the nation in industry as well as pursue higher education at international institutions. The bachelors in electrical engineering programme was launched in 2014 in affiliation with NUML and our first batch graduated in July 2018. In the year 2019, the college changed its affiliation from NUML to UET Lahore and the first batch, under renewed affiliation, was inducted accordingly. Our Electrical Engineering Program is following the framework of Outcome Based Education (OBE). The shifting of its teaching to OBE under the umbrella of Washington Accord and accreditation of its engineering program under the OBE System reflects the high quality standards being followed by the College. The pride of the department is its state of the art laboratories including communication lab, microwave and antenna lab, digital systems and electrical circuits lab. We have the lowest student to teacher ratio meaning more individual attention to each student and the lowest tuition fees among all private engineering institutions in the region.

Introduction:
Electrical Engineering is a professional education to develop young engineers with many career opportunities. Electrical Engineering is a base engineering discipline to support all power and energy sector engineers. It serves as input in many cases to electronics, computer, telecommunication, robotics, aeronautics and even in space power systems.

The young qualified engineers will be able to pursue their career in PTCL, WAPDA, energy production & distribution and electrical goods manufacturing industries. They can further enhance their qualification in the fields of Electronics, Computer Engineering/Sciences, Robotics, Solar Systems, Nanotechnologies etc. Electrical engineering also has a major role in other sub fields like control & automation and signal processing. It is also vital in new and emerging fields such as robotics, smart renewable energy systems, remote sensing, cyber-crime prevention etc.
 Grafton College is an affiliated institution of UET Lahore and standard curriculum and regulations of the parent university are followed in compliance with PEC guidelines. In addition, the college has developed collaboration with local and international experts in order to implement innovative ideas in the international market. PEC registration will allow our graduates to apply for appropriate international professional licenses.

Faculty of Electrical Engineering

Engr. Col (R) Dr. Tahir Ejaz
Associate Professor
Head of Department

Engr. Owais Khan
Lecturer

Engr. Dr. Hadayatullah Khan
Assistant Professor

Engr. Haleema Sadia
Lecturer

Engr. Hassan Khalid
Lecturer
Program Coordinator

Engr. Waqar Masood
Lab Engineer

Engr. Waqar ul Hassan
Lecturer

Engr. Farooq Riaz
Lab Engineer

Engr. Usman Nasir
Lecturer

Engr. Allah Bux
Lab Engineer

Engr. Atif Mahmood
Lecturer

Department Vision:

"The Grafton College Bachelors of Electrical Engineering Program endeavors to prepare lifelong learners to succeed with in the rapidly changing engineering environment and who are committed to becoming leaders in the industry as well as academic and research institutes"

Department Mission:

"The mission of the Grafton College Bachelors of Electrical Engineering Program is to produce professional engineers that demonstrates competency necessary to function and deliver solution in diverse engineering situations and scenarios. The program develops critical thinkers committed to professionalism, teamwork and community service"

Program Educational Objectives (PEOs):

The Program Educational Objectives of Electrical Engineering program are to produce Electrical Engineering graduates who:

PEO 1 — Demonstrate excellence of skills in pursuing profession, higher education or managing a self-initiated business activity.

PEO 2 — Engage in continuous professional enhancement to create innovative solutions of complex problem.

PEO 3 — Exercise integrity and exhibit commitment to social issues, ethical responsibilities and diversified challenges.

Program Learning Outcomes (PLOs)

After completion of the Bachelor's degree in electrical engineering at Grafton College, the engineers should be able to possess the following PLOs; graduates who:

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

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

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

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

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

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

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

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

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

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

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

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

Scheme of Study:

Knowledge Area: Humanities			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
IS-101	Islamic/ Ethics & Pakistan Studies I	3	0
IS-201	Islamic/ Ethics & Pakistan Studies II	3	0
HU-221	Technical Wring and Presentation Skills	3	0
HU-111L	Communication Skills	0	1
HU-400	International Language	3	0
Knowledge Area: : Management Sciences			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
MGT-414	Entrepreneurship & Business Management	3	0
MGT 211	Principles of Management	3	0

Scheme of Study:

Knowledge Area: Natural Sciences			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
MA-123	Calculus	3	0
PHY-111	Applied Physics	3	0
MA - 228	Differential Equation (MA - 123)	3	0
MA-234	Linear Algebra	3	0
MA-346	Numerical Methods	3	0
Knowledge Area: Computing			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
CS-141	Introduction to Computing	3	1
EE 170	Programming Fundamentals	3	1
EE 232	Data Structure and Algorithms	3	1
Knowledge Area: Engineering Foundation			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
EE 100	Electric Circuits	3	1
EE 101	Electrical and Electronics Workshop	3	1

Scheme of Study:

EE 110	Circuit Analysis and Design (EE 100)	3	1
EE 212	Semiconductor Devices	3	1
EE 272	Digital Systems	3	1
EE 220	Signal & Systems	3	0
ME 100L	Workshop Practice	0	1
ME 124L	Engineering Drawing	0	1
EE 300L	Embedded System Laboratory	0	1
Knowledge Area: Major based Core (Breadth)			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
CS-211	Discrete Mathematical Structures	3	0
CS-212	Data Structures and Algorithms	3	1
CS-201	Numerical Analysis	3	1
CS-281	Object Oriented Analysis and Design	3	1
CSE-301	Probability and Random Variables	3	0
CS-362	Operating Systems	3	1
CS-363	Database Systems	3	1

Scheme of Study:

Knowledge Area: Major based Core (Depth)			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
EE 213	Analog and Digital Electronic Circuits (EE212)	3	1
EE 322	Analog and Digital Communications	3	1
EE 312	Power Electronics	3	1
EE 340	Control Systems	3	1
EE-350	Electric Machinery Fundamentals	3	1
EE 357	Power System Analysis	3	1
EE 358	Power Distribution Systems	3	0
EE 380	Electromagnetic Theory	3	0
EE 384	Digital Signal Processing (EE 220)	3	1
EE 4XX	Elective	3	1
EE 4XX	Elective	3	1
EE 4XX	Elective	3	1
EE 4XX	Elective	3	1
Knowledge Area: Interdisciplinary Engineering Breadth – 1			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
ME-102	Applied Thermodynamics	3	1
IME	Social & Ethical Aspects in	2	0

Scheme of Study:

	Engineering		
Knowledge Area: : Final Year Design Project			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
EE-499a Senior Final Year Project (Phase - I)		0	3
EE-499b Senior Final Year Project (Phase - II)		0	3

ELECTIVES

EE 411: Industrial Control Systems (L)

EE 412: Integrated Electronic Circuits (L)

EE 424: Satellite Engineering

EE 425: Wireless Communications (L) - Pre-Req: EE 384

EE 426: Digital Image Processing (L)

EE 431: Operating Systems (L)

EE 432: Computer Networks (L)

EE 436: Database Engineering (L)

EE 439: Introduction to Machine Learning

EE 450: High Voltage Engineering (L)

EE 452: Renewable Electrical Energy Systems

EE 453: Power System Operation and Control (L) - Pre-Requisite: EE 357

EE 454: Power System Protection (L) - Pre-Requisite: EE 357

EE 456: Introduction to Smart Grids

EE 460: Electrical Drives (L)

EE 461: Design of Electrical Machines (L)

EE 475: Computer Architecture (L)

EE 476: Introduction to VLSI Systems (L)

EE 477: Software Construction

EE 481: Optical Circuits and Systems

EE 482: Microwave Engineering - Passive Devices (L)

EE 483: Antenna Systems (L)

EE 484: Microwave Engineering - Active Devices (L) - Pre-Req: EE 482

EE 485: Electromagnetic Compatibility

EE 419: Electrical Instruments and Measurements (L)

EE 492: Biomedical Instrumentation (L) - Pre - Req: EE 213

EE 493: Clinical Laboratory Instrumentation (L) - Pre-Req: EE 492

EE 494: Biomedical Imaging (L)

EE 495: Biomechanics (L)

EE 496: Medical Robotics(L) - Pre - Req: EE 340

Year 3								
Semester 5					**Semester 6**			
EE 273	Microprocessor Systems	3	1		EE 322	Analog & Digital Communications	3	1
EE 340	Control Systems	3	1		EE 384	Digital Signal Processing	3	1
EE 302	Applied Probability	3	0		EE 312	Power Electronics	3	1
EE 357	Power System Analysis	3	1		EE 300L	Embedded Systems Laboratory	0	1
EE 380	Electromagnetic Theory	3	0		EE 358	Power Distribution Systems	3	0
					IME-251	Social & Ethical Aspects in Engg.	2	0
	Subtotal	18				Subtotal	18	
Year 4								
Semester 7					**Semester 8**			
EE	Elective	3	1		EE	Elective	3	1
EE	Elective	3	1		EE	Elective	3	1
IS 201	Islamic & Pakistan Studies II/Ethics	3	0		MGT	Restricted Elective (Management)	3	0
MGT 211	Principles of Management	3	0		EE 499b	Project (Phase-II)	0	3
EE 499a	Project (Phase-I)	0	3					
	Subtotal	17				Subtotal	14	

	Year 1								

Code	Title	Credit Hours		Code	Title	Credit Hours	
		Theory	Lab			Theory	Lab
Semester 1				Semester 2			
ME 102	Applied Thermodynamics	3	1	EE 101	Electrical & Electronics Workshop	0	1
MGT 102	Sociology	2	0	EE 100	Electric Circuits	3	1
ME 100L	Workshop Practice	0	1	ME 124L	Engineering Drawing	0	1
PHY111	Applied Physics	2	1	IS 101	Islamic & Pakistan Studies-I/Ethics	3	0
HU 1XX	International Language	No Cr		EE 170	Programming Fundamentals	2	1
MA 123	Calculus	3	0	HU 111	Communication Skills	0	1
CS 141	Introduction to Computing	2	1	MA 228	Differential Equations	3	0
	Subtotal	16			Subtotal	16	

	Year 2								

Code	Title	Theory	Lab	Code	Title	Theory	Lab
Semester 3				Semester 4			
EE 212	Semiconductor Devices	3	1	EE 213	Analog and Digital Electronic Circuits	3	1
EE 110	Circuit Analysis & Design	3	1	EE 220	Signals and Systems	3	0
EE 272	Digital Systems	3	1	EE 250	Electric Machinery Fundamentals	3	1
HU 221	Technical Writing & Presentation Skills	3	0	EE 232	Data Structures and Algorithms	3	1
MA 234	Linear Algebra	3	0	MA 346	Numerical Methods	3	0
	Subtotal	18			Subtotal	18	

Departmental Labs:

The Department of Electrical Engineering provides labs that are fully equipped and staffed as per PEC and UET recommendations. The labs allow the students to master the use of electrical instruments and perform hands on experimentation & develop projects as required by syllabi.

Following labs are available which cover the practical work as recommended by the accreditation bodies. State of art training equipment is provided to the students who are practically engaged in to learn basic concepts and work - ing of different instruments. Overall about half of the curriculum is completed in the associated laboratory work in order to create strong practical skills.

Basic Electrical Engineering & Electronics Lab
Communication Systems and Telecommunication (CS&T) Lab
Digital Systems & Digital Electronics Lab
Computer System Lab
Microcomputer / Microcontroller Interfacing Lab
Electrical Machines Lab
Computer Lab
Project Lab
Drawing Lab

Applied Electricity Lab
Wireless Engineering Lab
Printed Circuit Board Lab
Microwave Lab
Applied Physics Lab
Computer Networking Lab
Project Design Lab
Electrical Machines Lab
Drawing Lab
Control Systems Lab
Power Electronics Lab

B. Sc. EE - Bachelor of Science in Electrical Engineering

Degree Title	:	BSc EE
Duration	:	4 years/ 8 semesters
Credit hours	:	135
Offering Semester	:	Fall
Awarding body	:	University of Engineering & Technology Lahore
Curriculum	:	UET Lahore – as per HEC guidelines
Eligibility Criteria	:	Intermediate or equivalent with Physics, Mathematics, Chemistry having minimum of 60% marks or DAE in the relevant discipline of engineering as specified by Pakistan Engineering Council (PEC) with minimum of 60% marks from a recognized educational board. Result awaiting candidates can also apply. All HEC's & PEC's conditions apply. UET combined Entry Test

Degree completing requirements:

To earn a Bachelor's degree in Electrical Engineering, a student must successfully complete the course work as outlined in 4-year layout plans including six credit hours of Senior Project Design and Summer Internship (non - credit). The total credit hours required are grouped into Basic Sciences, Humanities & Management, Core courses, Stream Specific courses and Senior Design Project as given in Degree plans. This distribution is in accordance with the PEC/HEC requirement and guideline.

Bachelor of Science in Computer Science

Compete & Perform Internationally

Department of Computer Science

Introduction:

The Computer Science is one of the most popular, highly paid and versatile discipline, which can be learnt and practiced in the real world. This knowledge is applicable to all other organizations including financial institutions, banking, electronics media, network communications, and mobile applications and even in building large integrated and intelligent systems used in defense and space mission. There is always a good demand for programmers, software engineers, system analysts and software architects/designers around the globe. Therefore, opportunities for good computer science professionals exist around the world and in many cases, they can work from home. The B.Sc. Hons. (Computer Science) is a standard four-year degree program, which is accredited and approved by HEC and University of Engineering & Technology, Lahore. However, the curriculum is designed in such a way that students can strengthen their career in many fields as mentioned above. The study plan, specialization and facilities are outlined below for your future guidance. The flexibility of our program, strong lab facilities and collaboration between academia and industry make it a unique choice for young, hardworking and innovative professionals to initiate and excel in this career.

FACULTY OF COMPUTER SCIENCE

Dr. Riaz Ahmed Qamar
Assistant Professor
Head of Department

Mr. Raja Shamayel
Lecturer

Tauqeer Ahmed
Assistant Professor
Program Coordinator

Ms. Aqsa Ashfaq
Lecturer

Mr. Fazal Wahid
Junior Lecturer

Department Vision: To be recognized as a reputed organization and center of excellence in computer sciences by provid - ing quality education in both the theoretical and applied foundations of computer science & its emerging branches espe - cially focusing on artificial intelligence with available resources and dedicated faculty in order to train students to compete, lead and succeed in their respective journeys of life to serve the nation with devotion, dedication and skill.

Program Mission: Our mission is to teach and train our students to become successful Computer Science entrepreneurs by combining student's management skills, intellectual capabilities, writing, communication and the presentation skills to make them hardworking and successful problem solvers so as to tackle complex 21 st century challenges.

Program Educational Objectives (PEOs):
The Educational Objectives of Computer Science program is to produce computer professionals who:

PEO - 01: Demonstrate excellence in profession through in-depth knowledge and skills in the field of computer science.
PEO - 02: Engage in continuous professional development and exhibit a quest of learning.
PEO - 03: Show professional integrity and commitment to social and ethical responsibilities.

Program Learning Outcomes:

PLO 1: Engineering Knowledge
Students will be able to apply knowledge of mathematics, science, engineering fundamentals and specialized skill set to the solution of complex real world problems.

PLO 2: Problem Analysis
Students will be able to identify, formulate and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

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

PLO 4: Modern Tool Usage
Students will be able to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities, with an understanding of the limitations.

PLO 5: Ethics
Students will be able to apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

PLO 6: Individual and Teamwork
Students will be able to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.

PLO 7: Communication
Students will be able to communicate effectively, orally as well as in writing, on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PLO 8: Project Management
Students will be able to demonstrate management skills and apply engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.

PLO 9: Investigation
Students will be able to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis and interpretation of experimental data, and synthesis of information to derive valid conclusions.

PLO 10: Environment and Sustainability
Students will be able to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.

PLO 11: Lifelong Learning
Students will be able to recognize importance of, and pursue lifelong learning in the broader context of innovation and technological developments.

PLO 12: The Engineer and Society
Students will be able to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solution to complex engineering problems.

Departmental Labs:

The department of Computer Science provides labs that are fully equipped and staffed as per NCEAC recommenda - tions. The labs allow the students to master the use of computing equipment and perform hands on experimentation and develop projects as required by syllabus.

Following labs are available which cover the practical work as recommended by the accreditation bodies.

1. Computer Lab
2. Research Lab

Requirements for Degree Completion:

To become eligible for award of B.Sc. degree, a student must satisfy the following requirements:

1. Must have completed at least 133 credit hours from prescribed course work.
2. Must have earned minimum CGPA of at least 2.0 on a scale of 4.0.
Note: The requirements may vary with the rules and procedures as defined by HEC and degree awarding body (UET, Lahore) from time to time.

Final Year Project

A final year project of 6 Credit hours and Summer Internship of minimum six weeks is mandatory for the successful completion of the program as per the following details: As per the requirement of HEC, minimum 6 credit hours of Final Year Project are mandatory for the degree program.

Duration

The minimum duration for completion of B.Sc. Hons. degree is four years. The HEC allows a maximum period of seven years to complete B.Sc. Hons. degree requirements.

The BS Computer Science (BSCS) program offers a wide range of courses which provides students

Department of Computer Science

Dr. Riaz Ahmad Qamar
Asst. Professor/ Head of Department (Computer Science)
Email: riazahmad.qamar@pk.graftoncollege.org
Qualification: PhD degree in Cryptography in 2013 from University Technology Malaysia.
Experience: 32 years' experience in Pakistan Atomic Energy.

MR. TAUQEER AHMED
Asst. Professor / Program Coordinator (Computer Science)
Email: tauqeer.ahmed@pk.graftoncollege.org
Qualification: MS in Computer Science in 2007 from NUCES, Islamabad., PhD Scholar
Teaching Interest: Programming, Databases, Software Engineering, Artificial Intelligence
Research Interest: Data Mining, Machine Learning

Mr. Raja Shamayel
Lecturer (Computer Science)
Email: raja.shamayel@pk.graftoncollege.org
Qualification: MS in Computer Sciences & Engineering in 2012 from Chalmers University of Technology, Sweden.
Teaching Interest: Computer Networks & Security, Operating System, Distributed Computing
Research Interest: Next Generation Networks.

MS. AQSA ASHFAQ
Lecturer (Computer Science)
Email: aqsa.ashfaq@pk.graftoncollege.org
Qualification: MS in Software Engineering in 2019 from SZABIST, Islamabad.
Teaching Interest: Object Oriented Programming, Artificial Intelligence, DBMS, FORMAL METHODS
Research Interest: Deep Learning, Image Processing.

MR. FAZAL WAHID
Junior Lecturer (Computer Science)
Email: it.admin@pk.graftoncollege.org
Qualification: BS in Telecommunication & Networking in 2017 from COMSATS, Islamabad.

Shared Faculty

MS. SUMAIRA NADEEM
Lecturer (Mathematics)
Email: sumaira.nadeem@pk.graftoncollege.org
Qualification: MS in Mathematical Modeling and Scientific Computing in 2014 from Air University, ISB
Teaching Interest: Multivariable Calculus, Differential equations, Probability & Statistics, Linear Algebra,
Research Interest: Numerical Solution of Lattice Boltzmann equation for Shear Dependent Viscosity Flow
Models.

Mr. Atif Shabbir
Lecturer (Management Sciences)
Email: atifshabbir@pk.graftoncollege.org
Qualification: MS-MBA in Marketing in 2018 from Quaid-i-Azam University, Islamabad
Teaching Interest: Entrepreneurship, Business Management, Marketing Management,
Research Interest: The Impact of Cultural Dimensions on Consumer Decision Making.

MS. SARA ANWAR
Lecturer (English)
Email: sara.anwar@pk.graftoncollege.org
Qualification: MS in English Literature & Linguistics in 2017 from COMSATS, Islamabad.
Teaching Interest: Romantic Poetry, Applied Linguistics
Research Interest: Critical Discourse Analysis, Translation Studies, English for Specific Purposes

B.Sc.(Hons)
(Computer Science) Curriculum

The BS Computer Science (BSCS) program offers a wide range of courses which provides students with an opportunity to study particular areas of Computer Science in greater depth from both theoretical and practical perspective. The curriculum is progressively implemented to build desired careers among students in their specialization areas. Our B.Sc. (Hons) Program consists of 40 courses, a Final Year Project of 6 credit hours in their chosen concentration area with a total of 133 credit hours.

Knowledge Area: Humanities - 13 Credit Hours			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
HU-221	Technical Wring and Presentation Skills	3	0
HU-111L	Communication Skills	0	1
HU-400	International Language	3	0
HU-102	Functional English	3	0
IS101	Islamic & Pakistan Studies – I	3	0
IS102	Islamic & Pakistan Studies – II	3	0
Knowledge Area: Management Sciences - 6 Credit Hours			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
MGT-414	Entrepreneurship & Business Management	3	0
XX-XXX	A Course from Undergraduate program of IBM	3	0

Knowledge Area: Natural Sciences - 18 Credit Hours

Course Code	Subject Title	Credit Hours	
		Theory	Lab
MA-123	Calculus	3	0
MA-116	Linear Algebra and Differential Equations	3	0
MA-224	Multivariate Calculus	3	0
MA-256	Probability &Statistical Process	2	0
MA-346	Numerical Methods	3	0
PHY-111	Applied Physic	2	1

Knowledge Area: Computing - 13 Credit Hours

Course Code	Subject Title	Credit Hours	
		Theory	Lab
CS-141	Introduction to Computing	3	1
CS-142	Programming Fundamentals	3	1
CS-241	Object Oriented Programming	3	1

Knowledge Area: Engineering Foundation- 16 Credit Hours			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
CSE-121	Circuit Analysis I	3	1
CSE-221	Digital Logic Design	3	1
CSE-222	Computer Organization and Assembly Language	3	1
CSE-331	Computer Networks	3	1
Knowledge Area: Major based Core (Breadth) - 26 Credit Hours			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
CS-211	Discrete Mathematical Structures	3	0
CS-212	Data Structures and Algorithms	3	1
CS-201	Numerical Analysis	3	1
CS-281	Object Oriented Analysis and Design	3	1
CSE-301	Probability and Random Variables	3	0
CS-362	Operating Systems	3	1
CS-363	Database Systems	3	1

Knowledge Area: Major based Core (Depth) - 23 Credit Hours			
Course Code	Subject Title	Credit Hours	
		Theory	Lab
CS-302	Introduction to Human Computer Interaction	3	0
CS-311	Analysis of Algorithms	3	0
CS-312	Theory of Automata and Formal Languages	3	0
CS-361	Artificial Intelligence	3	1
CS-381	Software Engineering	3	1
CS-382	Web Technologies	3	0
CS-411	Compiler Construction	3	0
CS-441	Mobile Application Development	3	1
CS-443	Introduction to Parallel & Distributed Computing	3	0
CS-445	Programming Languages	3	0
CSE-421	Computer Architecture	3	0
CSEL-251	Professional practice in Software Development	3	0
CSEL-464	Information Security	3	0

Knowledge Area: Interdisciplinary Engineering Breadth – 1 - 1 Credit Hour			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
ME-100L	Workshop Practice	0	1
Knowledge Area: : Final Year Design Project - 6 Credit Hours			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
CSE-491	FYP I	0	3
CSE-492	FYP II	0	3
Knowledge Area: : Major Based Electives - 12 Credit Hours			
Course Code	**Subject Title**		
CSE-301	UX/UI Design		
CS-422	Web Technologies		
CSEL-312	Game Development		
CSEL-323	Open Source Software Development		
CSEL-314	Enterprise Application Development		
CSEL-315	Strategic Time Management for Software Developers		
CSEL-316	Strategic Vision for Software Developers		

CSEL-317	Effective Leadership for Software Developers
CSEL-318	Bridging the Difference between Software Teams
CSEL-319	Habits of Highly Effective Software Engineers
CSE-421	Computer Architecture
CS-281	Object oriented Analysis & Design
CS-481	Design Patterns
CSEL-353	Software Requirement Engineering
CSEL-354	Software Quality Assurance
CSEL-355	Software Measurement & Metrics
CSEL-356	Software Design & Architecture
CSEL-357	Software Project Management
CSEL-358	Introduction to Program Analysis
CSEL-359	Formal Methods
SE-431	Wireless Networks
CSEL-362	Internetworking with UNIX TCP/IP
CSEL-363	Ethical Hacking
CSEL-371	Database Administration

CSEL-372	Database Performance & Optimization
CSEL-373	Database Backup & Recovery
CSEL-374	Distributed Databases
CSEL-375	Data Warehousing
CS-461	Management Information Systems
CSEL-377	Information Retrieval
CSEL-378	Graph Databases
CSEL-381	Web Semantic
CSEL-382	Introduction to Data Science
CSEL-383	Natural Language Processing
CSEL-384	Soft Computing
CS-463	Data Mining
CS-464	Machine Learning
CS-401	Computer Graphics
CSEL-393	Computer Vision & Image Processing
CSEL-394	Operation Research
CSEL-395	Internet of Things (IoT)
CSEL-396	Big Data Analytics

B.Sc.(Hons)
Computer Science Scheme Of Studies

Semester 1: Credit Hours: 18			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
CS-142	Programming Fundamentals	3	1
CS-141	Introduction to Computing	3	1
HU-102	Functional English	3	0
MA-123	Calculus	3	0
PHY-111	Applied Physic	2	1
ME-100L	Workshop Practice	0	1
Semester 2: Credit Hours : 18			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
CS-241	Object Oriented Programming	3	1
CSE-221	Digital Logic Design	3	1
XX-XXX	A Course from Undergraduate program of IBM	3	0
HU-111L	Communication Skills	0	1

Course Code	Subject Title	Theory	Lab
MA-116	Linear Algebra and Differential Equations	3	0
CS-211	Discrete Mathematical Structures	3	0

Semester 3: Credit Hours : 16

Course Code	Subject Title	Credit Hours	
		Theory	Lab
CS-212	Data Structures and Algorithms	3	1
HU-221	Technical Writing and Presentation Skills	3	0
CSE-222	Computer Organization and Assembly	3	1
CSEL-251	Professional practice in Software Development	3	0
MA-256	Probability &Statistical Process	2	0

Semester 4: Credit Hours : 17

Course Code	Subject Title	Credit Hours	
		Theory	Lab
CS-363	Database Systems	3	1
CS-362	Operating Systems	3	1
MA-224	Multivariate Calculus	3	0
CS-311	Analysis of Algorithms	3	0
CS-312	Theory of Automata and Formal Languages	3	0

Semester 5: Credit Hours : 17			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
CS-411	**Compiler Construction**	3	0
CS-361	**Artificial Intelligence**	3	1
CS-302	**Introduction to Human Computer Interaction**	3	0
CS-445	**Programming Languages**	3	0
CS-381	**Software Engineering**	3	1
Semester 6: Credit Hours : 17			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
CSE-331	**Computer Networks**	3	1
CS-441	**Mobile Application Development**	3	1
CSEL-XXX	**Computer Science Elective – I**	3	0
CSEL-XXX	**Computer Science Elective – II**	3	0
MA-346	**Numerical Methods**	3	0

Semester 7: Credit Hours : 18			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
CSE-491	FYP – I	0	3
CS-443	Introduction to Parallel & Distributed Computing	3	0
CSEL-464	Information Security	3	0
CSEL-XXX	Computer Science Elective – III	3	0
IS-101	Islamic & Pakistan Studies – I	3	0
CSEL-XXX	Computer Science Elective – IV	3	0
Semester 8: Credit Hours : 18			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
CSE- 492	FYP II	0	3
MGT-414	Entrepreneurship & Business Management	3	0
CSEL-XXX	Computer Science Elective – V	3	0
IS-201	Islamic & Pakistan Studies – II	3	0
HU-400	International Language	3	0
XX-XXX	A Course from Undergraduate program of IBM	3	0

Semester 7: Credit Hours : 18			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
CSE-491	FYP – I	0	3
CS-443	Introduction to Parallel & Distributed Computing	3	0
CSEL-464	Information Security	3	0
CSEL-XXX	Computer Science Elective – III	3	0
IS-101	Islamic & Pakistan Studies – I	3	0
CSEL-XXX	Computer Science Elective – IV	3	0
Semester 8: Credit Hours : 18			
Course Code	**Subject Title**	**Credit Hours**	
		Theory	**Lab**
CSE- 492	FYP II	0	3
MGT-414	Entrepreneurship & Business Management	3	0
CSEL-XXX	Computer Science Elective – V	3	0
IS-201	Islamic & Pakistan Studies – II	3	0
HU-400	International Language	3	0
XX-XXX	A Course from Undergraduate program of IBM	3	0

B.Sc.(Hons)
Computer Science) At A Glance

Degree Title:	B.Sc. (Hons) Computer Science
Curriculum:	HEC & UET Lahore Approved
Duration:	4 years/ 8 semesters
Credit hours:	133
Semester schedule:	Spring & Fall
Awarding body:	UET Lahore
Eligibility Criteria:	F. Sc (Mathematics, Physics) with Chemistry/ Computer Science/ Statistics
All HEC's conditions apply	60% marks in F. Sc/ ICS/ DAE/ B. Sc/ B. Tech (Pass) Examination excluding Sports and Hafiz-e-Quran marks.
Admission Test and Interview	Appeared in the entry test arranged by UET Lahore for that academic session in which the candidate seeks admission secured at least 60% adjusted admission marks

*Any other course as specified by HEC/UET Lahore may be offered

Message From Grafton Alumn

Abu Bakar Zubair, [2017]
Entrepreneur
"The educational environment at Grafton College grooms me professionally, gave me confidence and self-reliance of knowledge, and equipped me to build my own career."

Usama Sana, [2017]
App developer at (MEP) Royal Advance Abu Dhabi, UAE
"I can positively say Grafton College has made me a better person. Teachers are very caring and interested in students' good fortune. They make sure every class is fun, educational and interactive"

Quality Enhancement Cell

(Promoting Academic Excellence)

The means by which an institution can guarantee with confidence and certainty, that the standards and quality of its educational provision are being maintained and enhanced.

Vision:

To ensure standard and facilitate the college in continuous quality improvement to achieve excellence in education.

Mission:

a) To ensure that each department has a clear vision and mission.
b) To ensure that each department has clearly define processes and rules.
c) To conduct periodic assessment of departments w.r.t their goals.
d) To assist each academic department in assessment of program learning objectives and program learning outcomes through direct and indirect methods at regular intervals.
e) To provide feedback to all stake holder for continuous quality improvement of the college.

Composition:

Quality Enhancement Cell (QEC) at Grafton Established in September - 2018

Deputy Director QEC
Dr. Hidayat Khan

Manager QEC
Engr. Mr. Waqar ul Hassan

One associate member from each academic department
Member from Electrical Engineering Department
Member from Computer Science Department

Major Functions of Quality Enhancement Cell:

1. QEC is responsible for promoting public confidence that the quality and standards of the award of degrees are ensured and safe - guarded.
2. QEC is responsible for the review of quality standards and the quality of teaching and learning in each subject area.
3. QEC is responsible for the review of academic affiliations with Parent University in terms of effective management of standards and quality of programs.
4. QEC is responsible for defining clear and explicit standards as points of reference to the reviews to be carried out. It should also help the employees to know as to what they could expect from candidates.
5. QEC is responsible to develop qualifications framework by setting out the attributes and abilities that can be expected from the holder of a degree.
6. QEC is responsible to ensure program specifications. These are standard set of information clarifying what knowledge, under - standing, skills and other attributes a student will have developed on successfully completing a specific program.
7. QEC is responsible to develop quality assurance processes and methods of evaluation to affirm that the quality of provision and the standard of awards are being maintained and to foster curriculum, subject and staff development, together with research and other scholarly activities.
8. QEC is responsible to ensure that the quality assurance procedures are designed to fit in with the arrangements in place nationally for maintaining and improving the quality of Higher Education.
9. QEC also responsible to develop procedures for the following:

   a. Approval of new programs
   b. Periodic Monitoring and evaluation including Program Educational Objectives (PEOs), Program Learning Outcomes (PLOs) and Course Learning Outcomes (CLOs)
   c. Departmental review
   d. Student feedback
   e. Employer feedback
   f. Quality assurance for degree programs.
   g. Subject review
   h. Institutional assessment
   i. Program specifications
   j. Qualification framework

Admission Requirements

Admissions

Admissions are offered once in a year and offered in Fall semester. Free Seminars are arranged at campus and material is avail - able on website www.graftoncollege.edu.pk and Facebook pages. The Prospectus and forms are also available online. The College has expert counselors and faculty members to guide the applicants who come to take admission.
Admissions in Grafton College, Islamabad is strictly on merit basis determined by UET, Lahore.

There are no special quotas, reserved seats nor there any arbitrary age limit for the applicants. The College is open to all persons of either gender and of any religion, color, creed, class or domicile who are academically qualified for the courses of studies offered by Grafton College.

General Instructions

Grafton College, Islamabad is an affiliated campus of UET, Lahore. Applicants are required to get registered for UET entry test by due date and qualify the Admission Test.
• Grafton College shall accept the Application Form from 18th June, 2020.
• If you have any query regarding admissions which can be answered satisfactorily on the telephone, you may contact us at 051-8357378/9, +923339889544 during working hours (8am to 4:00 pm).
• Members of College staff will also be available for personal consultation during admission period.
• Try to submit the application along with the required documents as early as possible. Do not wait for the last date.
• As soon as the process of selection is complete the merit list will be notified.
• All documents to be attached with the application form should be attested by a Class – I gazette officer of the government.

Required Subject Combination and Equivalence

Subject Combinations in Intermediate or equivalent	Programs for which Eligible
Maths, Physics, Chemistry	B.Sc. Electrical Engineering
Maths, Physics ,Chemistry/Computer Science/Stats	B.Sc. (Hons) Computer Science

Note:
- Equivalence Certificate would be required for Examinations conducted by Non-Pakistani Boards.
- Credit shall be added to the academic marks in HSSC/Equivalent to Applicants who areHafiz - e- Quran or Sportsman.

Hafiz - e- Quran Marks = 20
Sports Marks = 10

- All candidates including additional Maths may apply for provisional admission if they have completed one of the above courses and are awaiting results. However, the confirmation of the admission is subject to the submission of results as per the date specified in admission offer letter.
- Confirmation of the admission will also be subject to an undertaking by the student and his father/guardian to abide by the rules and regulations of the College from time to time.

Eligibility for Admission

General Eligibility Requirements
An applicant for admission to any of the Bachelor Degree course offered by the University must fulfill the following requirements:

a. He should have obtained at least 60% marks in Intermediate/DAE examination excluding Hifz-e-Quran marks.
b. He should have appeared in the entry test arranged by UET, Lahore for that particular academic Session in which he seeks admission.
c. He should have at least 50% overall adjusted admission marks computed by giving 70% weightage to Intermediate/DAE examination result and 30% to University Entry Test result.
d. He should meet standards of physique and eye sight laid down in medical certificate.

Other Eligibility Requirements

General Eligibility Requirements

An applicant for admission to any of the Bachelor Degree course offered by the University must fulfill the following requirements:

a. He should have obtained at least 60% marks in Intermediate/DAE examination excluding Hifz-e-Quran marks.

b. He should have appeared in the entry test arranged by UET, Lahore for that particular academic Session in which he seeks admission.

c. He should have at least 50% overall adjusted admission marks computed by giving 70% weightage to Intermediate/DAE examination result and 30% to University Entry Test result.

d. He should meet standards of physique and eye sight laid down in medical certificate.

Other Eligibility Requirements

a. Candidates with DAE qualification should have their Diploma relevant to the branch of Engineering in which he seeks admission. Such Applicants shall not be eligible unless their diplomas are in the relevant technology as specified against each degree course given below:-

i. B.Sc. Electrical Engineering
o Diploma in Electrical Technology
o Diploma in Telecommunication Technology
o Diploma in Electronics Technology
o Diploma in Avionics Technology
o Diploma in Instrumentation Technology
o Diploma in Information Technology
o Diploma in Precision Mechanical & Instrument Technology
o Diploma in Radar Technology
o Diploma in Automation Technology
o Diploma in Radio Technology
o Diploma in Instrumentation & Process Control Technology

ii. B.Sc. Computer Science
o Diploma in Computer Information Technology
o Diploma in Computer Technology
o Diploma in Software Technology
o Diploma in Electrical Technology
o Diploma in Electronics Technology
o Diploma in Biomedical Technology
o Diploma in Radar Technology
o Diploma in Automation Technology
o Diploma in Radio Technology
o Diploma in Instruments Technology
o Diploma in Instrumentation & Process Control Technology
o Diploma in Telecommunication Technology
o Process Control Technology

Merit Determination

- 70% weightage of Intermediate or equivalent
- 30% weightage of entry Test

Applying at Grafton College
There are a number of ways now you can apply at Grafton College.

By Post
Application Form can be downloaded/printed from the college website www.graftoncollege.edu.pk. Fill it out and send by registered post/courier along with the supporting documents mentioned below

Online
Candidates may also apply online (by completing the online application form). In such case, the candidate shall furnish attested educational documents and the application processing fee of Rs*650/ in the form of paid Challan (Original) OR Crossed Bank Draft drawn in favor of Grafton College Islamabad through registered post/courier

By Hand
You can Visit Grafton College and submit your application along with the supporting documents

Result Awaiting Candidates
Students who have appeared in FA/FSc or BA/BSc examination and waiting for their results are eligible to apply at Grafton College. Such students should provide a Certificate from the institution (duly signed and Stamp) mentioning that he/she has appeared in the exams and is likely to pass with at least the required percentage of marks in their respective discipline.

Documents to be attached
Attested Copies of all previous educational Degrees/Transcripts/Certificate • Six latest passport size photographs
• Photo copy National Identity card OR Form "B" of candidate (if under 18) • Character Certificate from the Institute last attended
• Hope certificate from the Institute last attended (In case of result awaiting students)
• Admission Test :
• For Punjab domicile holders: Copy of Combined UET Lahore Admission test 2020
• For domicile holders of other provinces: Copy of Combined UET Lahore Admission test 2020 OR NTS test OR Test of any Public Sector engineering university of Pakistan OR Admission test conducted by any approved testing service of Pakistan
• Paid BANK Challan (Original) or Crossed Bank Draft mentioning Name and Course on the back of the Bank Draft

Grafton College

Admission Office,
6 Park Road, Chak Shahzad,
P.O Tarlai Kalan, Islamabad
Tel: 051-8357378/9, 2321100/1, 923339889544
Grafton College,

6 Park road Chak Shahzad
P.O Tarlai Kalan,Islamabad,
Tel: 051-8357378/9,
Email: admissions@graftoncollege.edu.pk

Student Affairs

Haleema Saadia
Assistant Director Student Affairs
MS Electrical Engineering
CEME, NUST

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, coordinating and supervising the co-curricular and extracurricular activities, within and outside the college. Student Affairs Office aims to cultivate and enhance students potential in sports, literature, music, culture, arts, social entrepreneurship and community development program. The office maintains a close liaison with various industries and organizations for student projects, industrial visits, placement and internship program beside arranging Inter University Events, Open House, Job Fair, Industrial Visits, Excursion Trips, etc.

Health Care, Transport & Hostel Facility
Grafton College provides transportation facilities for students. The service is available on regular basis. The College has an on campus medical investigation room (MI Room) managed by medical staff from whom students can receive consultation and other medical aid in case of emer   -gency. Hostel facility for male and female students is available in the recommended hostels nearby Grafton College vicinity often at walking distance.

AstroTurf Football Ground
In order to develop individual speed, strength, flexibility and power for improved athletic performance Austro Turf Supports Complex is estab-lished in the College. Students utilize this facility during their spare time. Competitions are also held in which different teams participate.

Halls
Centrally air-conditioned Halls (Hall A & Hall B), having a seating capacity for 200 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 debates, decla -mation contests, dramas, skits, ramp walk, musical, technical & scientific shows and exhibitions.

Cafeteria
A cafeteria is operational in the Grafton College Campus where fresh, hygienic and healthy food is available to students. The cafeteria provides clean atmosphere and serve traditional and fast foods at reasonable prices. Cafeteria performance in terms of quality of food, prices and overall cleanliness of the area is monitored by faculty members and students.

Societies

Six different societies have been established to look after various interests of students. These are managed by Student Office Bearers (Presidents, Vice Presidents and Student Member). The Student Affairs Office holds the annual student body selection and provides guidance to students along with the Faculty-in-charge of the respective society.

Oath Taking Ceremony of Student Societies

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. The objective of the Society is to dig out and nurture talents of students within literature writing and oral communication. Under this society following events can be arranged:-
• Urdu Mushaira
• Bazm e Adab
• Essay competition
• Speech competition
• Book festivals

This Society works under the guidance of Sports & Cultural Committee

BazmeAdab organized by Literary Society

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. It also deals with
• Media coverage in university   • Covering events/functions   • Publishing of Magazines / Newsletters etc.
• Preparation of Intro media file for all events.
This Society works under the guidance of Sports & Cultural Committee.

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.
This Society also hosts a variety of informational entertainment and social activities. It includes
• Seminars   • Conferences
• Workshops   • Focus Groups Discussions
• Trips   • Concerts
• Festivals   • Farewell Dinners
• Blood donation camps   • First-aid
• Disaster management camps.

Oath Taking Ceremony of Student Societies

Sports Society
The society promotes sports activities among students by holding Inter Departmental sports competitions and encourages students to partici - pate in all Inter University competitions. Football, cricket, badminton, Ludo, Chess and table tennis matches are held quite frequently.

Games Organized By Sports Society

Science Society

This society provides a forum to enhance the scientific knowledge of the students. Promotion of the latest developments in Computer as well as modern technology is the major domain of work at the society. This Society may include

Poster / model competitions ⊠ Project competition ⊠ Open house involvement and technological competitions

Scholarships and Financial Assistance

Different types of scholarships are offered to student of Grafton College. Students can avail only one scholarship at a time.

Merit Scholarship for New Intake

⊠ Top five position holders from any board of Pakistan (Except technical board): 20% off in tuition fee
⊠ Students securing aggregate percentage up to 70%: 10% off in tuition fee
Merit Scholarship is for first semester only .However, student may perform well, compete and secure merit scholarship for continuing students in the subsequent semesters. The criteria for the merit scholarship for continuing students are as under.

Merit Scholarship for continuing students

In all Graduate programmes students achieving GPA of 4/4 in semester examination will be awarded merit scholarship amounting Rs.10,000/- for first position and Rs. 7,000/- for second position. In case of same GPA, decision of position will be based on percentage of marks. The schol-arship won by any student will be adjusted in the next semester fee of the students. However, student passing at the last semester will be given in the form of cheque. Merit scholarship given to a student in any Programme of Grafton College is specific for that Programme only, and the same shall continue in the subsequent semesters on maintaining the GPA 4/4. If two students in a Programme secure 4/4 GPA and have the same percentage then the scholarship of Rs. 17000/- will be distributed equally amongst both students.

Kinship

Up to 5% concession in tuition fee is authorized to the younger sibling admitted in any Programme of the College. This scholarship is applicable till the time the brother/sister graduates.

Grafton Employees Scholarship

10% scholarship is given to Grafton employees and their wards for admission in any one Programme of Grafton College Islamabad. This schol-arship shall be awarded to the son of those employees who have served the Colleges at least two years. Moreover, the employees will give an undertaking that they will serve the Grafton College for a minimum of two years after completion of the Programme. Seminars & Learning Enrichment Workshops/ Guest lectures Seminars and Workshops are an essential part of student knowledge, skills and character building. Grafton College offers learning Enrichment workshops on topics relevant to academic success and developing more effective study skills. Students attending a workshop would be prepared to share questions or challenges they have faced in order to get the most out of the session. The Seminars are arranged frequently to enlighten students on contemporary issues of national and International significance. They also provide them an opportunity to socialize with scholars, business executives industry specialist, educationists and eminent personalities.

Seminars & Learning Enrichment Workshops/ Guest lectures

Seminars and Workshops are an essential part of student knowledge, skills and character building. Grafton College offers learning Enrichment workshops on topics relevant to academic success and developing more effective study skills. Students attending a workshop would be prepared to share questions or challenges they have faced in order to get the most out of the session. The Seminars are arranged frequently to enlighten students on contemporary issues of national and International significance. They also provide them an opportunity to socialize with scholars, business executives, industry specialist, educationists and eminent personalities.

Dress Code

Student must dress in a way that is appropriate and does not offend others. The following Dress Code is not allowed:-
MALE. Sleepers/Hawai Chappals, Offensive writing & Caricature on any dress, Hipster, Shorts, jeans of any kind, Earings, bracelets etc.
FEMALE. See through and skin tight clothing, sleeveless, shirts above knee length.

College Discipline / Code of Conduct

Grafton College aims at enriching the personality of its students by including in them a sense of tolerance, discipline and civilized behavior. The behavior of the students at the campus will be governed by the following rules and regulations. The Discipline Committee will have the authori - ty to impose penalties on the students found guilty of breach of discipline on the campus and during conduct of examinations. The following among others, shall constitute acts of indiscipline:

• Violation of Dress Code
• Use of indecent and filthy language; undesirable remarks and gestures; acts of moral turpitude; disorderly behavior like abusing, harassment, quarreling, fighting, insolence towards others.
• Physical contact of any form between students of opposite gender is absolutely not permitted.
• Indulgence in acts which may cause insult or physical injury to the colleagues, teachers, officers and staff of the College or any other person.
• Challenging a College official.
• Spreading by word of mouth or written material, any religious, sectarian, ethnic regional, linguistic conflicts/hatred, or any material derogatory to Pakistan, Islam or any other
religion.

- Impersonation, giving false information, willful suppression of information, cheating or deceiving.
- Possession, carrying or use of any type of weapons.
- Damaging College property, including building, equipment, vehicle, etc. in any manner
- Using any College property, without lawful authority.
- Sale, distribution or consumption of intoxicants on the campus.
- Use of student organizations for furthering the cause of political parties.
- Bringing to the premises of the College any expelled students or anti-social elements.
- Obstructing the functioning of the College or causing disruption of teaching/research/ other activities.
- Any other relevant matter not specifically mentioned in these rules

Alumni and Placement Cell

To maintain the record of all graduation students using student Alumni forms and database. College Alumni and Graduation Committee Issues Alumni cards to all graduated students and ensure due help/support to the alumni in the College/outside the College premises. The Committee also arranges Alumni meetings for all graduating students /Alumni within/outside the campus.

IT Services
Information Technology Services (ITS)

Mr. Fazal Wahid
Manager Information Technology
BS (Telecommunication & Networking)
Fazal_wahid@pk.graftoncollege.org

The purpose of IT Services is to create 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 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.

Servers
The university has 5 servers that include open source proxy servers, LMS (Moodle) server, domain controller (centralized administration), file server and KSAS (system) server and backup domain controller server.

Equipment

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

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.
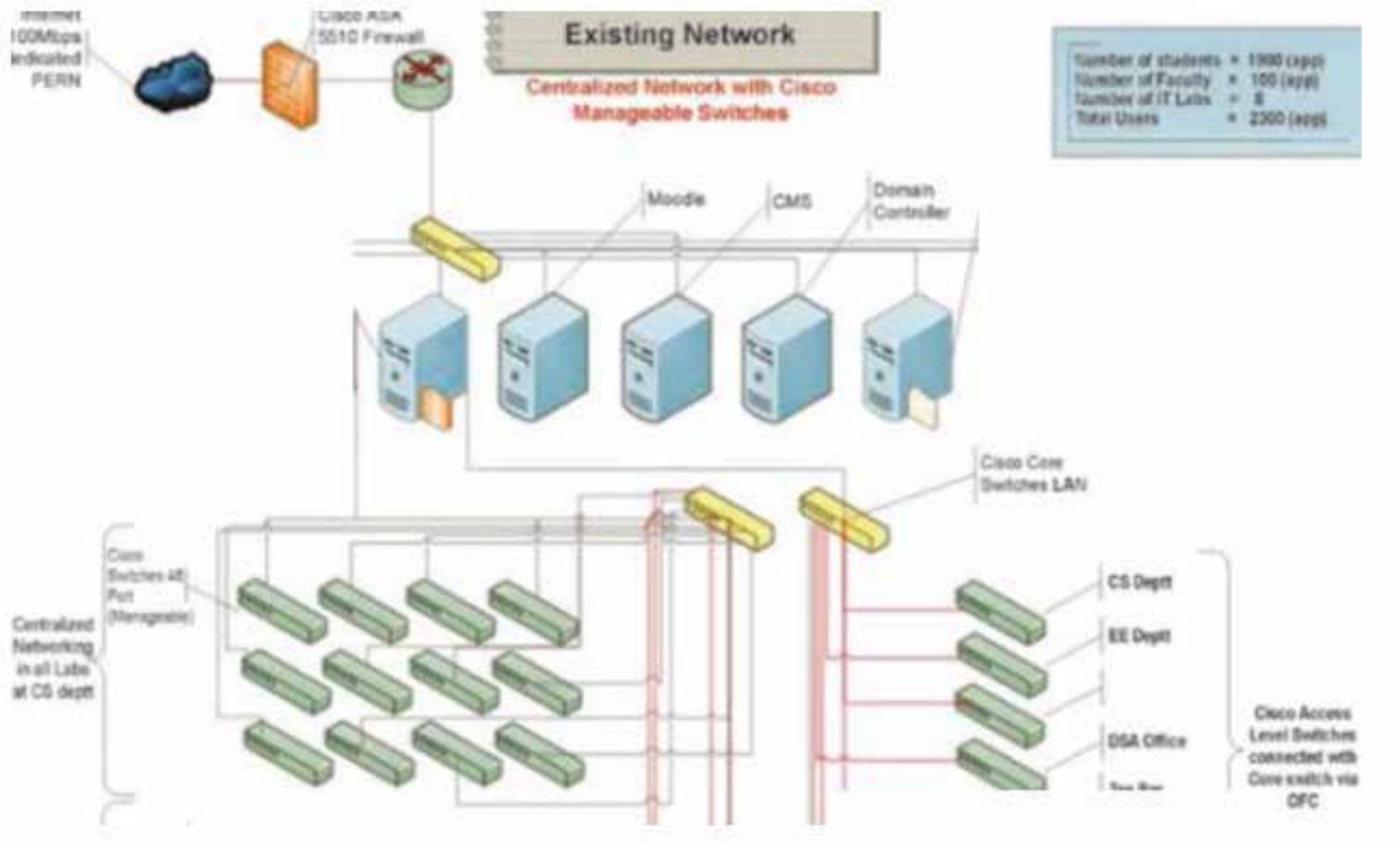
Data Center
The Data Center provides private cloud and cluster services to facilitate deployment of applications without the cost and complexity of buying and managing thunder-lying hardware and software layers.

Library Automation
A Gigabyte optical fiber cable connects the library with the university data center. Library is fully automated b 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 this digital library through public IP network for providing Access to the large number of journals and other research Material at national and international level.

The physical layout of our I.T Network

Library

Essar Ahmad Khan
Librarian
MSc (Library Science)
librarian@pk.graftoncollege.org

Grafton College Library forms an essential complement of academic pursuit of our faculty and students. The library provides access to materi - als and information resources which help them in studies. New students are given orientation visit of the library. The library is located on second floor in the main building of the college. It has a huge, beautiful and well-lit hall housing book collection as well as providing cozy environment for readers. It has sitting capacity for more than 100 readers at a time. It remains open from 8 am to 3:30 pm six days a week. The library is fully automated with Koha, an open source integrated library system. OPAC (online public access catalogue) is also provided for the facility of the students and the faculty. Full contents of the e-brary books and databases, like HEC online resources are also accessible through - out the campus and in all the departments. Library follows Dewy Decimal Classification Scheme and LCSH (Library of Congress Subject Head - ings) for the arrangement of its sources. The library collection is more than ten thousand volumes, not only Electrical Engineering, Electric Power System, as well as Computer Programing and Software Engineering, but also several hundred book on Islam, Pakistan, Urdu Literature and on current affairs are also a part of the library collection. The library has also subscription of several online databases of professional journal as well. The library staff is well qualified in the library profession, and ready to provide reference services to guide readers about print sources as well as online database.