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COMSATS

Institute of Information Technology

Graduate Prospectus
2011-2012

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Welcome to CIIT

The Graduate Prospectus 2011-2012 of the COMSATS Institute of Information Technology is in your hands. We hope it will bring out the unique and distinctive features that CIIT offers to its graduate students as an institution of higher learning and research.

Our aim is to provide you state of the art knowledge, develop your skills and create in you an enthusiasm that will propel you to meet the challenges that lie ahead, and enable you to effectively contribute towards progress and future development of our country in particular and the world in general.

CIIT is a leading research based institution, recognized nationally and internationally for its teaching standards and research output. It is being consistently rated among the top universities of Pakistan. More recently, it climbed one more notch to bag 6th ranking during 2010, based on the research productivity of its faculty measured by Thomson Reuters ISI Web of Knowledge, as certified by the Higher Education Commission. We have a unique blend of subjects available in our five Faculties: Science, Engineering, Business Administration, Information Science & Technology, and Architecture & Design. The graduate programs on offer are demand driven and relevant to the market needs.

CIIT is proud of its uncompromising standards that are quite exacting and which prepare well for professional life and personal development of more than 1,500 full time graduate students. Our students are seriously dedicated and committed to the academic pursuits. This helps us ensure a mature and focused environment conducive to learning and quality research.

Our graduate programs offer amalgamation of theory and practical knowledge in emerging technologies in a way that provides impetus to technical excellence, originality and a broad vision sharpened by transferable skills such as team work, communication and leadership for fruitful future careers. We achieve this courtesy our qualified faculty, which is drawn largely from academia as well as industry to ensure that links

with the academia and commercial worlds are robust and the students are able to work on real world problems. This provides an excellent basis for career progression of our students. CIIT graduates have a high success rate in securing jobs in industry, business, banking and other professions of their choice.

CIIT is committed to continuously strive for academic excellence and maintaining high standards of teaching and research. I am sure you will have an exciting, successful highly rewarding experience here at CIIT.

Dr. S. M. Junaid Zaidi, S.I., Rector

Contents

Chapter 1
Introduction

Why Choose CIIT?

COMSATS Institute of Information Technology (CIIT), a leading degree awarding institution of higher education in Pakistan is among the Centers of Excellence of Commission on Science and Technology for Sustainable Development in the South (COMSATS) www.comsats.org.

Established in 1998, CIIT is one of the fast growing research-based institutions in Pakistan, with a wide range of academic programs (ranging from basic sciences to cutting edge emerging technologies) and a network of inter-disciplinary research centers making it an ideal place for higher studies leading to MS and PhD degrees.

Since its establishment, CIIT has made multi-faceted growth in terms of campuses (currently it has seven campuses), number of students, faculty members, academic programs, research output, and public outreach, to accomplish its three-fold stated mission, i.e., Research and Discovery, Teaching and Learning, and Outreach and Public Service, which makes it a popular choice for undergraduate as well as graduate programs.

Quality of Research at CIIT

The Institute has an excellent reputation for the quality of its research degree training and with over 1,750 qualified faculty, many with foreign qualifications to their credit, will continue to provide the highest standards of teaching and research supervision. Our faculty is committed to ensure that graduate students receive appropriate training and guidance to nurture their drive for innovation, creativity and skills to explore new horizons in their respective fields. The research activity within the Institute is vast and extends across all faculties and departments, often crossing traditional subject boundaries. Activity covers both theoretical and applied research, as well as specific or contract research projects that are undertaken on behalf of outside bodies such as government, industry and research funding agencies.

Faculty members are active in research in their respective fields and more than 1,100 research articles have so far been published by them since 2002, with the following breakdown:

Faculty of Science	835
Faculty of Engineering	99
Faculty of Business Administration	134
Faculty of Information Sciences & Technology	48
Faculty of Architecture & Design	02
Total	**1,118**

To encourage and appreciate the graduate students for undertaking research an incentive of "Cash awards" is offered for each publication. The incentive of doing research is particularly important for young emerging faculty. To encourage the research graduates and young faculty, the CIIT has established "CIIT Research Grant Program" under which research grants up to Rs.500,000/- are available for research projects of short duration.

Further, to promote research, five Research Centers have been setup so far, which are symbol of pride and recognition for the Institute. These show the underlying strength in selected disciplines to carry out world-class research and development. CIIT has established these research centers with details as follows:

- Centre for Quantum Physics
- Centre for Advanced Studies in Telecommunication
- Centre for Research in Management Sciences
- Interdisciplinary Research Centre in Biomedical Materials (IRCBM)
- Business Incubation Centre (BIC)
- Centre for Policy Studies

Research Centres

The centers of excellence are symbol of pride and recognition for the institutes. These show the underlying strength in these disciplines to carry out world class research and development. The CIIT has established a number of research centers and a few are in the developing stage.

Centre for Quantum Physics

Centre for Quantum Physics was established at CIIT Islamabad in 2006 with the support of HEC and COMSTECH with a vision to establish a world class Centre in Quantum Physics.

Quantum Information theory and quantum computing are interdisciplinary emerging research fields with tremendous applications for technological development and practical implementation in highly fascinating area of quantum teleportation. These considerations have generated a great interest in the study of Quantum Physics across the world.

The centre has developed collaboration with prominent scientist from USA, China, Germany, Australia, South Korea and Saudi Arabia.

The Centre provides opportunities to undertake research leading to PhD in Quantum Physics. A quality research is being undertaken and published in the leading journals of the field.

Centre for Advanced Studies in Telecommunication

Center for Advanced Studies in Telecommunication (CAST) was established in December 2007 as an autonomous research cost center committed to quality research in the area of telecommunication. CAST has been funded by Higher Education Commission and CIIT's own resources. Establishment of CAST has ensured long term continuity of quality and industry relevant research.

Since there is an absence of any meaningful dialogue and collaboration between regional industry and universities, CAST has been developed with an aim to use it as an interface between university-based telecommunications activities and regional telecom government and community groups. CAST from its inception has been focused on developing strong industry links, with special regard to the practical implementation and realization of telecommunication technologies. In this regard CAST has established a marketing department for establishing and maintaining mutually beneficial commercial collaboration with local telecom industry.

The mission of CAST is to provide service to society by promoting quality research in telecommunication by virtue of its highly competent faculty and staff, sate-of-the-art research facilities, synergistic relationships with regional industry and by providing an intellectually stimulating environment for problem based research. Undergraduate students can also undertake their final year projects under the supervision of the research scholars working in CAST.

Centre for Research in Management Science at CIIT

The Centre for Research in Management Science is established at CIIT Islamabad. The centre has a number of active researchers from across the Finance and Accounting, Economics, Management, Marketing, and Information Technology areas. It is established with a view to promote research activities that lead to high quality research output. Another aim of the centre is to promote meaningful exchange of ideas and collaboration between regional industry and academia. A few objectives are as follows:

- To support high quality research within the department of Management Sciences, through promoting a research culture among staff and students and establishing and maintaining high quality research databases.
- To encourage and promote linkages with the industry and to offer quality information and training programs to commercial clients.

Interdisciplinary Research Centre in Biomedical Materials IRCBM

The interdisciplinary Research Centre in Biomedical Materials (IRCBM) was setup in 2008 at COMSATS Institute of Information Technology (CIIT), Lahore campus as a centre of excellence with multi-disciplinary approach to Biomaterials. The Centre works beyond subject boundaries with the aim of translating fundamental research to clinical care.

Scientists at IRCBM are carrying out research in the field of Bioceramics, Polymer Chemistry, Nanotechnology and Tissue Engineering. They are looking a new ways of synthesizing novel bone fixation and bone replacement materials in order to improve the biological properties. Bioperformance is determined via invivo and in-vitro biological testing and some of Pakistan's leading surgeons are associated with the centre.

Business Incubation Centre

The purpose of establishment of BIC at CIIT is in line with the vision 2030 of Planning Commission of Pakistan that Pakistan must become a developed, industrialized, just and prosperous nation within one generation. The concept lays emphasis on application of R&D, respectable employment opportunities for our educated and technical manpower and development of indigenous enterprises to create appropriate jobs and stop the cream of HR from settling abroad and to stop the brain drain. When employed in enterprises developed locally, the technical manpower will help to create knowledge based economy.

The objectives of the Incubation Centre are to provide a platform for young entrepreneurs, especially from outgoing students, faculty and small entrepreneurs to develop their technology based companies at the incubation centre. The selection of projects will be based on three criteria,

- The topics will be in fields of best CIIT strength and capabilities. The projects in Biosciences, Information Technology, Bioinformatics, Design, Project Management and Arts can be taken up straight away, while other needing incubation will be provided the opportunity.
- The projects with high national priority, like Agriculture, Energy, Electronics including Microwave and Telemetry will be selected for further development to make them marketable in association with entrepreneurs.
- Projects have to be attractive to entrepreneurs.

Ranking:

Since its inception, independent entities have evaluated CIIT and the quality of its programs, such as the Higher Education Commission (HEC), Pakistan Engineering Council, National Computing Education Accreditation Council (NCEAC) and the Institute of Scientific Information (ISI) Web of Knowledge. It is a matter of pride for CIIT that despite its short history, it has been able to register persistently remarkable rankings on the basis of its engineering programs as well as research productivity of the faculty members. The Higher Education Commission (HEC) of Pakistan has ranked CIIT among the top seven institutions of higher education in the country from 2005 to 2009 in terms of research output of its faculty, based on the cumulative Impact Factor, calculated by Thomson Reuters of the Institute of Scientific Information (ISI) web of knowledge (USA). In 2010, CIIT was able to climb one more step in its ranking based on Thomson Reuters of the Institute of Scientific Information (ISI) Web of Knowledge (USA), and has been placed now at number six among all Pakistani Universities and Degree Awarding Institutes, as notified by the HEC.

Friendly Campus Environment:

The institutions of higher learning are the places to generate and create new knowledge through a friendly, free environment conducive for freedom of thought, expression and reasoning. The CIIT is promoting these virtues and culture by providing a friendly atmosphere to interact with the students of all the provinces and diverse backgrounds. Because of this a great sense of fraternity and cultural mixing is seen on the campus. The CIIT is providing confidence and trust among the students by providing friendly and fearless environment. Our Ph.D. graduates have great confidence and trust on their abilities and a great desire to deliver in their future career. Our graduates are wiser and more knowledgeable.

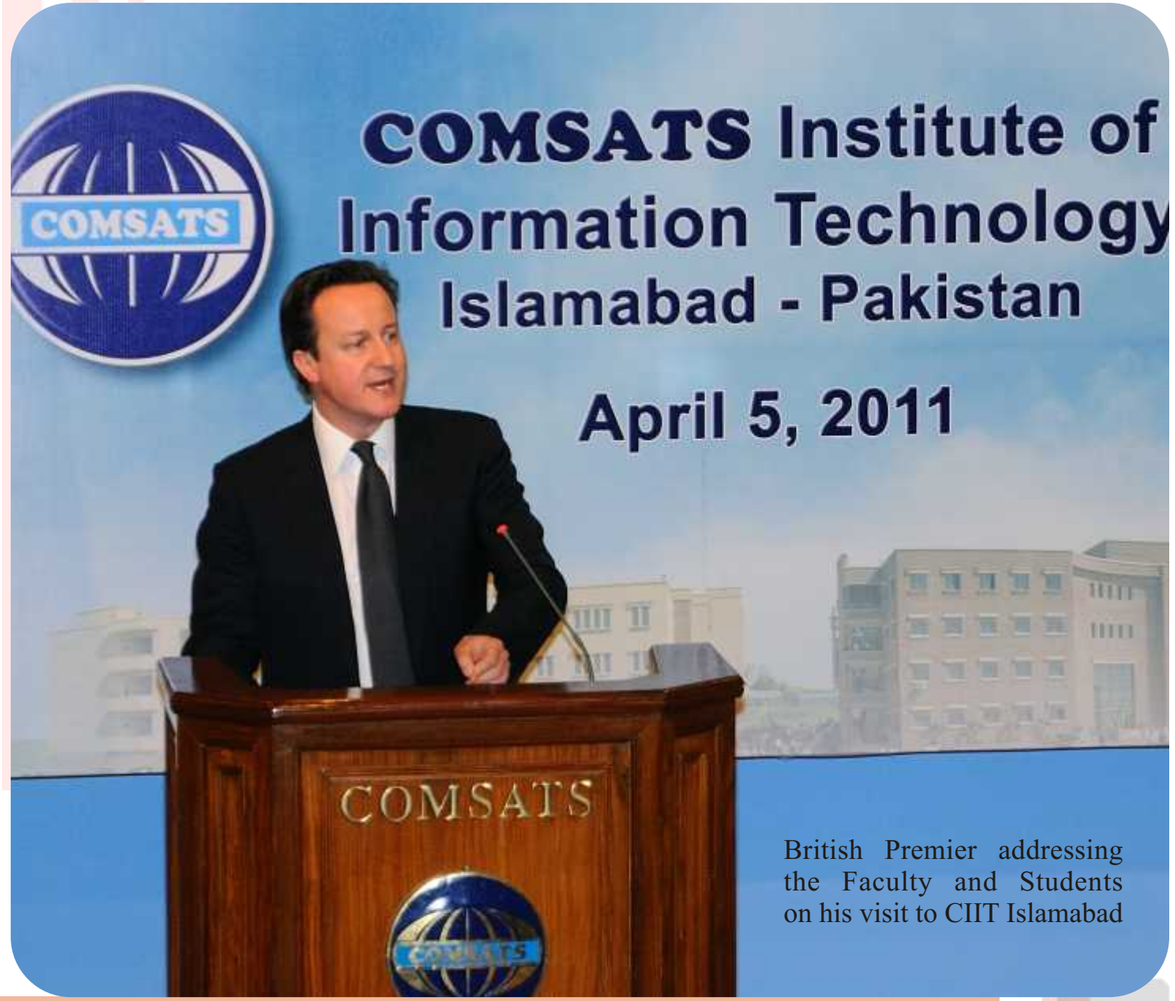
Diverse Community:

CIIT is an equal opportunity institution for the students, so it always welcomes students from all the corners of Pakistan and around the globe. This brings in the diverse community together, which generates great qualities of consideration, tolerance, understanding and fellow feeling among the graduates. The graduates of CIIT are overwhelmed with research, teaching and a spirit of serving across the country and the globe.

International Linkages:

Realizing that Research & Development activities in this era of tough competition and globalization cannot take place in isolation, the CIIT has established linkages with reputed national and international organizations. The CIIT in its brief history of eleven years has made landmark achievements by signing almost four dozen Memoranda of Understanding (MoUs) with national and some of the world's renowned educational institutions. The nucleus rationale of getting into linkages is to encourage exchange of students and faculty to pursue higher education, to organize joint conferences, workshops and seminars, to arrange joint research activities, to workout on staff development programs and other academic related activities. The list of some of the prominent agreements is as follows:

S. No	Name of Institution
1.	North Dakota State University (NDSU), USA
2.	Institute of Technology Petronas SDN. BHD, Malaysia
3.	TWAS-UNESCO
4.	Lancaster University, UK
5.	University of Bedfordshire, UK
6.	Berjaya University College of Hospitality, Kuala Lumpur, Malaysia
7.	Sumgayit State University, Azerbaijan
8.	Simon Fraser University, Canada
9.	University of British Columbia Okanogan, Canada
10.	University of Sheffield, UK
11.	Azerbaijan National Academy of Sciences, Azerbaijan
12.	Alma Mater Studiorum – University of Bologna (Italy)
13.	Harbin Institute of Technology (HIT), China
14.	Queen Mary, University of London, U.K
15.	Merseburg University of Applied Sciences, IBK, Germany
16.	University of Illinois, Urbana-Champaign, USA
17.	The University of Essex, UK
18.	School of Management, University of Surrey, U.K
19.	Tampere University of Technology (TUT), Finland
20.	Helsinki University of Technology (TKK), Finland



British Premier addressing the Faculty and Students on his visit to CIIT Islamabad

CIIT an overview

Historical Perspective:

The COMSATS Institute of Information Technology (CIIT) was established in 1998 as a project of the Commission on Science and Technology for Sustainable Development in the South (COMSATS), which is an inter-governmental organization with 21 member states in three continents; Asia, Africa and Latin America. Currently, CIIT has the status of a public sector degree awarding higher education institution.

COMSATS itself came into being in 1994. This organization is dedicated to highlighting the role of S&T in the development plans of the South and the facilitation of South-South and North-South Cooperation for capacity building in S&T. An excellent arrangement for S&T cooperation is provided through a Network of 16 Centers of Excellence affiliated with COMSATS in various member countries including CIIT in Pakistan.

COMSATS Member Countries:

Bangladesh	Jordan	Sri Lanka
China	Kazakhstan	Sudan
Colombia	Korea (DPR)	Syria
Egypt	Nigeria	Tanzania
Ghana	Pakistan	Tunisia
Iran	Philippines	Uganda
Jamaica	Senegal	Zimbabwe

Charter:

The CIIT was awarded its Charter by the Federal Government on August 12, 2000. It was set up as a federally based Degree Awarding Institute (DAI) in the public sector. The President of Islamic Republic of Pakistan is the Patron of CIIT whereas the Federal Minister for Science & Technology is the Chancellor. CIIT functions under the guidance of the Board of Governors (BoG) headed by the Executive Director COMSATS. The principal academic and administrative officer of the Institute is the Rector, who performs his functions in accordance with the general policy guidelines laid down by the Board of Governors.

Composition of Board of Governors	
Executive Director, Commission on Science and Technology for Sustainable Development in the South (COMSATS)	Chairman
Secretary, Ministry of Science and Technology, Islamabad	Member
Secretary, Ministry of Education, Islamabad or his nominee	Member
Chairman, Higher Education Commission, Islamabad or his Nominee	Member
Nominee of Educational NGOs	Member
3 Persons of Outstanding Merit nominated by the Managing Committee of the COMSATS	Member
Rector, COMSATS Institute of Information Technology	Member
Campus Directors, COMSATS Institute of Information Technology	Member
2 Deans of Faculties of COMSATS Institute of Information Technology nominated by the Managing Committee of the COMSATS	Member
Registrar, COMSATS Institute of Information Technology	Member/Secretary

Board of Governors of CIIT

Vision:

CIIT aspires to be both one of the top research institutions and one of the best higher education providers in the country. It envisages becoming a university by the name of "COMSATS University", for which the legal documentation is under process with Government of Pakistan. The vision being pursued by the CIIT is to become one of the top 100 universities in the developing world. The CIIT further resolves to earn a place among the top 500 universities of the world by the year 2020.

Mission:

The CIIT is dedicated to the search for truth through advancement of learning and extending the frontiers of knowledge; to the sharing of this knowledge through education in academically diverse disciplines; and to the application of this knowledge to benefit the people of Pakistan in particular, and the Muslim Ummah and the world, in general. The Institute's mission is threefold:

i) **Research and Discovery**

Generate and preserve knowledge, understanding and creativity by instigating enquiry, conducting high-quality research and promoting scholarship, that benefit students, scholars and communities across the country, the Muslim Ummah and the world , at large.

ii) **Teaching and Learning**

Share the knowledge, understanding and creativity by providing a broad range of educational programs among a diverse community of learners and teachers and prepare graduate, professional and undergraduate students as well as non-degree seeking students interested in continuing education and lifelong learning for active roles in competitive and culturally diverse environments.

iii) **Outreach and Public Service**

Extend, apply and exchange knowledge between the institute and society by applying scholarly expertise to intellectual, social and technological problems, by helping organizations and individuals respond to their changing environments, and by making the knowledge and resources created and preserved at the institute accessible to the citizens. Using the resources of its multiple campuses in an integrated fashion, the Institute vies to strengthen the services to the state through the education of a modern work force, research and development, technology commercialization and partnership with business, government and community groups.

Campuses:

The CIIT, besides its principal campus at Islamabad, has six other fully functional campuses at Lahore, Abbottabad, Wah, Attock, Sahiwal and Vehari, while few more campuses at Gujrat, Toba Tek Singh, Quetta, etc are in advanced planning stages. On the advice of the Federal Government, efforts are also under way for opening up of a campus in the province of Sindh. The CIIT is planning to open an overseas campus in the Gulf region also.

Faculties, Departments, Research Centers & Academic Programs:

The CIIT at present comprises the following 05 Faculties, 16 Departments & 05 Research Centers. Presently 23 undergraduate degree programs and 32 graduate programs are on offer.

Faculty Distinction:

More than 330 faculty members and academic managers holding PhD qualification are currently serving the CIIT. The remaining has MS / M.Phil in relevant fields.

Graduate Output:

CIIT has proudly produced more than 12,000 graduates since its inception in 2000. So far 33 convocations have been organized in its campuses.

Students:

Total:	18,653
Undergraduate:	14,710
Master:	2,386
Graduate:	1,557

Faculty:

Total 1,771

Faculty Development:

More than 420 faculty members are undergoing advanced education / training leading to MS and PhD degrees and post doctoral research in USA, UK, China, France, Sweden, Australia, Austria, Germany, Canada, Malaysia, Finland, Korea, Netherlands, etc. The funding for advanced education has come from CIIT Scholarships, HEC Scholarships and a few from self sponsorships.

Services:

- Academic Faculties
- Teaching Departments
- Specialized Research Labs
- Students Counseling Centers
- Career Development Cells
- COMSATS Technologies
- Edward De Bono Foundation
- Inter-Islamic Network on Information Technology (INIT)
- CISCO Academy
- National Testing Service (NTS)
- Center of Excellence in Information and Communication Technologies

GRADUATE Programs Offered

Admissions in the Graduate Program (MS/PhD) are being offered at Islamabad, Abbottabad, Attock, Lahore and Wah campuses in the subjects shown as below.

Islamabad Campus

Department of Biosciences:

- MS/PhD in Biosciences
  Specializations/Focus Areas:
  Biochemistry and Molecular Biology
  Molecular Genetics
  Microbiology and Immunology
  Developmental Biology
  Biotechnology
  Molecular Virology
- MS in Bioinformatics

Department of Computer Sciences:

- MS and PhD in Computer Science
- MS in Health Informatics

Department of Electrical Engineering:

- MS and PhD in Electrical Engineering
  Specializations/Focus Areas:
  Computer Engineering
  Electronic Systems Engineering
  Automation and Control Engineering
  Power Engineering
  Telecommunication Engineering
  Networks Engineering
  Energy Engineering

Department of Management Sciences:

- MS/PhD in Management Sciences
- MS in Economics
- MS in Project Management
- MS in Strategic Marketing
- MS in Energy Management
- MS in Banking and Finance
- MS in Entrepreneurship & Innovation
- MBA (1.5 years)

Department of Mathematics:

- MS and PhD in Mathematics

Department of Meteorology:

- MS and PhD in Meteorology
- MS Meteorology (Specialization in Seismology)
- MS in Remote Sensing & GIS

Department of Physics:

- MS/PhD in Physics
- MS in Nanotechnology

Abbottabad Campus

Department of Chemistry:

- MS and PhD in Chemistry

Department of Computer Science:

- MS in Computer Science

Department of Electrical Engineering:

- MS and PhD in Electrical Engineering
  Specializations/Focus Areas:
  Automation and Control Engineering (for PhD only)
  Power Engineering
  Telecommunication Engineering

Department of Environmental Sciences:

- MS and PhD in Biotechnology
- MS and PhD in Environmental Science
- MS in Sustainable Water Sanitation Health and Development

Department of Management Sciences:

- MS in Management Sciences
- MS in Project Management
- MS in Banking and Finance
- MBA (1.5 Years)

Department of Development Studies:

- MS in Development Studies

Department of Mathematics:

- MS in Mathematics

Department of Pharmacy:

- MS/PhD Pharmacy

Lahore Campus

Department of Computer Science:

- MS and PhD in Computer Science

Department of Management Sciences:

- MS/PhD in Management Sciences
- MS/PhD in Economics
- MS in Project Management
- MS in Quality Management
- MBA(1.5 years)

Department of Mathematics:
- MS and PhD in Mathematics

Department of Physics:
- MS/PhD in Physics
- MS in Nanotechnology

Department of Electrical Engineering:
- MS and PhD in Electrical Engineering
  Specializations/Focus Areas:
  Telecommunication Engineering

Department of Chemical Engineering:
- MS in Chemical Engineering
- PhD in Chemical Engineering

Wah Campus

Department of Computer Science:
- MS in Computer Science

Department of Management Sciences:
- MS in Management Sciences
- MBA (1.5 years)

Department of Mathematics:
- MS in Mathematics

Department of Electrical Engineering:
- MS and PhD in Electrical Engineering
  Specializations/Focus Areas:
  Telecommunication, Computer and Power Engineering

Attock Campus

Department of Electrical Engineering:
- MS in Electrical Engineering
  Specialization/Focus Area:
  Communication and Radar Technology

Department of Management Sciences:
- MS Management Sciences
- MBA(1.5 Years)

Sahiwal Campus

Department of Management Sciences:
- MBA(1.5 Years)

Admissions

The admission into the graduate program will be strictly on merit. The merit will be determined on the basis of the academic record, test and interview.

Admission Pre-requisites

MS admission:
- A 16 years degree in the relevant field from an accredited educational institution with first division (annual system) or CGPA 2.5/4.0 (semester system) with no third division or D grade throughout the academic career.
  NTS GAT (General) with 50 % marks.

PhD Admission:
- MS/M.Phil or its equivalent degree in the relevant field from an accredited educational institution with CGPA of 3.0/4.0 or 70% marks with no third division or D grade through out the academic career.

GRE Requirement:
- GRE (Subject) as per HEC policy or NTS GAT (Subject) with 60% marks.

Duration for MS degree:

The duration of studies for MS degree shall not be less than one and half years and not more than four years.

Duration for PhD degree:

The duration of studies for PhD degree shall normally be not less than three years and not more than five years. In exceptional cases, Board of Advanced Studies and Research (BASAR) of CIIT may allow the extension beyond five years.

Course Work:

MS Degree

- Total Minimum Credit Hours: 30
- The candidate has to complete 30 credit hours for MS degree. Normally, the candidate has to undertake minimum 24 credit hours of course work and 06 credit hours of MS thesis. The non thesis option may also be available and the candidate can take 06 credit hours of course work in lieu of MS thesis, where available.
- The candidate can take any number of credit hours in one semester. The candidate may drop one semester altogether but the time will be counted toward maximum time limit allowed.

PhD Degree

- Eighteen-(18) credit hrs of course work.
- After Completion of Course work, the candidate is required to pass the comprehensive examination.

Conformance to HEC Policies

The policies of the institute are designed to conform to the policies/regulations of HEC for graduate programs.

Scholarships and Assistantships

A number of MS and PhD Scholarships and teaching/research assistantships are available on merit for the students.

Scholarship for OIC and COMSATS member Countries

A limited number of scholarships for MS Programs (only) at CIIT, Islamabad Campus for the students from the OIC Member Countries and COMSATS Member Countries are available. The MS Programs being offered and the number of scholarships for each program are as follows:

MS Program (02-year)	For COMSATS Member Countries	For OIC Member Countries
Biosciences	05	05
Computer Science	03	05
Electrical Engineering	-	05
Management Sciences	05	-
Mathematics	05	05
Meteorology	02	-
Physics	05	05
Total Scholarships (per year)	**25**	**25**

Applying to CIIT

Local Students

Applications are invited in response to the admission notices in the press. Admissions are conducted according to an Admission schedule, which is prominently given in these admission notices. Prospectus along with Admission Form is made available on payment of Rs. 500/- from all campuses of CIIT. The Admission Forms can also be downloaded from CIIT website. However, the downloaded forms shall be submitted to the concerned CIIT campus along with a bank draft / Pay Order of Rs. 500/- in favour of CIIT. The Admission Forms complete in all respect must be submitted at the campus where the admission is sought.

Entrance Test

Prospective students desirous of getting admission in graduate (MS) programs of CIIT should appear in the GAT (general) test conducted by National Testing Service (NTS). The dates of these tests are prominently displayed on the NTS website: www.nts.org.pk. The result of the NTS test is also displayed on the NTS website. Candidates securing at least 50% are eligible to apply for admission in graduate (MS) programs of CIIT.

Interview

The list of candidates short-listed for Interview is displayed on the specified dates on the Campus / Department. The selected candidates are required to appear before the Departmental graduate Admission Committee for interview and selection.

The overall merit list is prepared by combining the weighted marks obtained in the previous public examinations with the marks obtained in the NTS test and interview.

Weightage Criteria

The weightage criteria for the admission programs are as follows:

Academic Record:	40%
NTS Test:	40%
Interview:	20%

Final Merit List

The final merit list is displayed on the departmental notice boards as well as on CIIT website. Although the Admission Office will also contact successful applicants by email or phone, the applicants are advised to keep in touch with the concerned department or visit CIIT website for latest information.

Fee Structure (For local students)

Fee Structure (For local students)	
Admission Fee (One time charges)	Rs 12,000
Endowment Fund (One time)	Rs 5,000
Caution Money (Refundable)	Rs 5,000
Degree processing fee	Rs 5,000
Tuition Fee	Rs 2,500 per credit hour
Registration Fee	Rs 3,000 per semester
Lab / Bench Charges	Rs 10,000 per semester

International Students

CIIT welcomes international applicants for admission to its various degree programs. For this purpose, special seats have been reserved for international students in each discipline at Islamabad Campus.

Concrete efforts are also being made by CIIT to attract foreign students from all around the world and especially from COMSATS Member Countries and OIC Member Countries for admission in CIIT to different graduate degree Programs.

The potential candidates may apply for admission to a degree program, if they fulfill the prescribed eligibility criteria for that program. Applications can be made on the Admission Form, which is available in the prospectus in hand. The applications complete in all respects with following information should be sent back to the CIIT on the address mentioned at the backside of the application form. The students from OIC and COMSATS Member countries applying for Scholarship shall be required to submit a recommendation letter from the respective secretariats of their organizations.

Name of Department and Program

Please verify the department and program in which you wish to enroll. For the name of department and program, please refer to this prospectus.

Application Qualifications

a. Applicants who are residing outside Pakistan at the time of application.
b. Application qualifications are the same as those for Pakistani students.

Application Documents (only main items are listed below)

a. Duly signed Application Form (in duplicate)
b. Research Plan
c. Academic Transcripts
d. Copies of completed degrees
e. Certificate showing sound knowledge of written as well as spoken English (IELTS/TOEFL)
f. Eight Passport size Photographs (with blue background).
g. One copy of applicant's valid passport (the page showing his/her name and photo)
h. Reference Letter(s)
i. Three copies of duly filled Government of Pakistan permission form (Student Information Sheet). (Available with Admission Form)

1. CIIT shall offer admissions after evaluation of the academic record of the applicant. However, applicants for MS/PhD are required to submit result of NTS/GRE exam within the first semester of their joining the CIIT.
2. CIIT shall issue admission offer letter to the student and copy of the same shall be sent to the Higher Education Commission (HEC) of Pakistan to confirm and endorse admission to Ministry of Interior. HEC will coordinate for seeking all the required approvals/verification concerning the student's visa requirement.
3. Ministry of Interior, after necessary verifications and procedures, shall send visa advice to Pakistani Embassy in the country of the student's origin.
4. Students shall approach the Pakistani mission abroad for the student visa on the production of necessary documents and after fulfillment of all the requirements. The visa shall be renewed annually in Pakistan through concerned passport office on the basis of security clearance.

The further details on the visa procedure for foreign students can be obtained from the HEC's website by clicking the following link:

http://www.hec.gov.pk/InsideHEC/Divisions/AECA

Fee Structure:

Item	International Students (Regular)	OIC and COMSATS Member Countries for MS Studies (Only) under Scholarship Scheme
Prospectus Charges	US$ 15	Complimentary
Admission Fee (One Time Charges)	US$ 200	US$ 200
Per Semester Fee (including tuition fee, user charges and registration fee)	US$ 1,500	US$ 150*
Boarding (including meals +utilities), Lodging and transportation (Hostel/Campus/Hostel once a day)	As per need basis (Normally US$ 1,500 per semester)	US$ 550**

* & ** Students from the OIC and COMSATS Member countries applying for the MS Programs at CIIT Islamabad Campus through the secretariats of these organizations shall be offered 100% tuition fee waiver and free of cost accommodation, subject to number of available scholarship slots in each program, as mentioned at page.18 of this prospectus. All other students shall be treated and charged as per the regular international students.

- Above-mentioned charges do not include airfares, incidentals and any other item, which is not listed.
- Bank Draft (Cashier Check) to be made payable to COMSATS Institute of Information Technology, Islamabad, Pakistan.

CIIT Delegation meeting Secretary General OIC at Jeddah

CIIT
Campuses

CIIT Campuses

The COMSATS Institute of Information Technology (CIIT) is a multi-campus centre of higher learning. Currently, it has seven functional campuses at the following places:

1. Islamabad
2. Abbottabad
3. Wah
4. Lahore
5. Attock
6. Sahiwal
7. Vehari

A few more campuses are in advanced stage of planning and are expected to be launched in the near future.

Presently the student strength of CIIT is more than 18,000 full time students with faculty strength of more than 1,800. Specifically, the strength of MS students is about 1352 and that of Ph.D. is 205.

Welcome to Islamabad

Situated at the edge of Pothohar Plateau in the footsteps of Margalla hills, Islamabad the capital city of Pakistan is a great place to study and best place to live. The city experiences all the four weathers in a calendar year with hot summers during May & June followed by monsoon rains during July & August. Winters are cold, with temperatures occasionally falling down below zero during December to February and a pleasant spring during March & April.

Islamabad is known for it multi-ethnic environment and a hub of cultural and business activities and a great place for national and international cuisines.

Among the places of interest in and around Islamabad, Sharkarparian Hill, Daman-e-koh & Pir Sohawa offer a bird's eye view of the city, whereas Rawal Lake is favourite recreational spot for those who love blue waters and sunny skies. The Faisal Mosque, named after the King Faisal of Saudi Arabia, is one of the largest mosque in the world. Islamabad is linked by road to nearby hill stations of Muree, Nathigali and Ayubia which are popular tourist resorts to beat the scorching heart in summer and to see snow fall in winter.

Rawalpindi considered to be twin city of Islamabad due to its proximity, has grown in recent years form a small garrison town to a vital commercial center. The CIIT Islamabad campus is situated at a suitable place approachable from Islamabad as well as Rawalpindi.

Islamabad being the Capital of Pakistan is accessible through direct and indirect international flights for all around the world.

Islamabad Campus

COMSATS Institute of Information Technology (CIIT), Islamabad was established in 1998 to promote Information Technology and to reduce the ever-growing gap between the developed and developing world through useful applications of science and technology. During the first year of its establishment, the Institute offered only a few certificate courses and a postgraduate diploma in computer studies with a single class room and limited resources.

Islamabad Campus, the main campus of CIIT is situated at Chak Shahazad, Islamabad. Currently around 5,000 students are enrolled in various degree programs at this Campus.

Islamabad Campus provides what a discerning student is looking for in a learning environment, academic excellence, quality teaching, and constructive leisure activities. We appreciate that it is crucial for today's student to work in a physical environment conducive to study. Here the faculty not only teaches but mentors the young and impressionable minds. The newly built campus is fully equipped with facilities of international standards. It is a marvel of modern architecture surrounded by a lush green environment and peaceful surroundings.

Programs on Offer at Islamabad Campus

Department of Biosciences:

- MS/PhD in Biosciences
  Specializations/Focus Areas:
  Biochemistry and Molecular Biology
  Molecular Genetics
  Microbiology and Immunology
  Developmental Biology
  Biotechnology
  Molecular Virology
- MS in Bioinformatics

Department of Computer Sciences:

- MS and PhD in Computer Science
- MS in Health Informatics

Department of Electrical Engineering:

- MS and PhD in Electrical Engineering
  Specializations/Focus Areas:
  Computer Engineering
  Electronic Systems Engineering
  Automation and Control Engineering Power Engineering
  Telecommunication Engineering
  Networks Engineering
  Energy Engineering

Department of Management Sciences:

- MS/PhD in Management Sciences
- MS in Economics
- MS in Project Management
- MS in Strategic Marketing
- MS in Energy Management
- MS in Banking and Finance
- MS in Entrepreneurship & Innovation
- MBA (1.5 years)

Department of Mathematics:

- MS and PhD in Mathematics

Department of Meteorology:

- MS and PhD in Meteorology
- MS Meteorology (Specialization in Seismology)
- MS in Remote Sensing & GIS

Department of Physics:

- MS/PhD in Physics
- MS in Nanotechnology

Facilities

The campus is spread over 43 acres with a total covered area of 354,261 sft. The campus comprises of 56 class rooms, 45 laboratories and the Central Library with a covered area of 52,771 sft.

Lecture Theatres

CIIT Islamabad has 56 spacious lecture theatres, with a total covered area of 35,000 sft. Each theatre has a capacity for 100-120 students. All lecture theatres are IT enabled, air-conditioned, well furnished, and well maintained.

Labs:

The Campus has deployed state-of-the-art IT infrastructure with a total number of 45 computer labs with a total covered area of 38,000 sft. More than seven hundred & fifty computers at Islamabad Campus is a prime example of CIIT's commitment to providing its students with optimum learning facilities. All workstations are networked to CIIT's LAN and a high bandwidth connection provides connectivity to internet round the clock. Major labs are Electronics, Microprocessor, VLSI and DSP and Biosciences laboratories.

(A detailed overview about various Labs and Research Group has been given in Chapter No. 3, Academics)

Library:

The library supports the academic programs of CIIT through collections, technology and services, which enables students and faculty to access digitized knowledge and information resources. This support empowers our students to develop the information and technological competencies necessary to achieve their educational, research and professional goals. This enables them to succeed in the workforce, apply lifelong learning skills; and participate productively in society.

The library is spacious, well planned, and offers tranquil environment. It is fast developing into one of the richest information resource centers in Islamabad. The library subscribes to a large number of periodicals and journals, which have educational value for students. In addition, it also offers its users a rich learning environment complemented with electronic information access and services. The library has circulation, 'reserve' and reference sections. Internet facilities in the library connect users to libraries around the world for reference, assistance and consultation.

The stock consists of about 36,000 latest books on a variety of disciplines like Electrical Engineering, Mathematics, Physics, Biosciences, Computer Science, Business & Management, Design & Architecture, English Language and Literature. Our target of books is about 750,000 for the faculty and students.

Library Automation:

The process of equipping this library with most modern technologies like RFID System and Library Management System is in final stages and once fully operational will provide users facilities like, self check in and check out for borrowing and returning of library material, Drop box for returning of borrowed library material, Online Public Access Catalogue (OPAC) of library resources, Online booking and reservation of library material, Digital Library, Electronic Journals and Databases, Audio/Visual Facilities, Dedicated computer systems for research and use for digital and electronic resources, wireless internet connection. Video conferencing room is another unique feature of this library. Equipped with latest audio video equipment and with a capacity of accommodating around 100 people, this facility provides excellent opportunity of remotely organizing and participating in lectures, workshops, seminars, discussions and meetings.

Reference Services
CIIT library has dedicated staff to provide efficient and reliable reference services and users can make queries by filling "Research Inquiry Form" and submitting it to Services Department of library.

Bibliographic and Book Information Services
Library compiles bibliographies for users on request and provides information about national and international publishers and book traders.

Interlibrary Loan and Searching Facility
An inter-library searching option is also available in the library. Users can search material available in the libraries of different campuses of CIIT, through Union Catalogue, and can request for desired literature from them. Users can request library staff to help them in getting their required literature from other libraries through interlibrary loan.

International Library Loan and Photocopying Service
Library provides facility for international lending and photocopying service through British Library Document Supply Center in UK and Library of Congress in USA. This service provides users opportunity to access books, journals and information resources which are not available locally. Library also provides facility of photocopying those items within the provisions of the Copyright Act.

Discussion Rooms
Specially designed discussion rooms are one of many facilities being provided by CIIT library. Users can reserve discussion room by filling out a form and submitting it to staff at circulation counter.

Research Cubicles
Specially designed for research, these cubicles are available only to PhD scholars and faculty members. Situated at the second floor of library these research cubicles can be reserved by contacting the library staff at second floor.

The library is also subscribing to the following on-line services:

Digital and E Library:

The library is providing complete access to more than 32,000 high quality, peer-reviewed journals, conferencing proceedings and articles through 22 different online databases under the HEC's National Digital Library Program. Students and faculty can access these resources from inside and outside the campus through IP address and VPN respectively. At present access through Virtual Private Network (VPN) is only available to senior faculty. Later on this facility could also be offered for the use of students as per the policy of CIIT. In addition to 32,000 journals, the Library is also giving access to around 50,000 online books through 12 different databases that have also been made available through the HEC's National Digital Library Program. The e-books support program will allow researchers to access most of the important text and reference books electronically in a variety of subject areas. Apart from this there are more than 10,000 e-books on different subject areas are currently available on the CIIT E-Library which is in ever-growing/developing stage and will become more and more exemplary/perfect with the passage of time.

A team comprising a number of professional staff is assigned to download the relevant books relevant to our taught courses from the open source and upload these books for use by the faculty, staff and students.

Hostels:

Although Islamabad Campus does not have dormitories on Campus; it has arranged rented hostel accommodation for 300 male and 150 female students. Further information on residential facilities is available from the Provost Office at the Islamabad Campus.

Common Room for Girls:

To facilitate our female students, the Campus has established a spacious and comfortable common room. This space has been designed to give female students a place to relax, offer prayers, study, have informal discussions in free time available. Daily newspapers, magazines, periodical and journals are available for leisure reading. Female students appreciate this facility a great deal.

Catering Services:

A food-street style catering service consisting of shops and kiosks having a wide range of quality snacks and meals, at modest prices, is available throughout the day on the Campus. Students can relax and enjoy their breaks over a cup of coffee or tea. For faculty members and visitors, a state-of-the-art food hall has been established, where a variety of hot meals are available on 'self-service' basis in a clean and relaxing environment on subsidized rates.

Mosque:

Regular prayers are held on the campus mosque. At one time almost 500 persons can pray inside the mosque. Now plans have been finalized to construct a land mark mosque on Islamabad Campus with capacity to accommodate more than 1,000 people, with separate facility for females and people with special needs.

Photocopying Facility:

Presently, 6 machines are working and over 10,000 pages are photocopied every day. The photocopy center is working on subsidized rates. The photocopy center has also the facility of spiral binding, stapler binding and hard binding.

Extra Curricular Activities:

Extensive extracurricular activities are a way to soften tough and grilling academic rigor. It also provides opportunities to make new friends. Islamabad campus is very active in extra-curricular activities, as would be clear in the following paragraphs.

Adventure Club

The Adventure Club organizes adventurous activities for students. The activities include excursions, hiking and trekking, visits to historical places, hill stations and geological sites. The Adventure Club currently has more than 250 student members. Here the adventurous will find good company to give vent to their unbridled spirits.

Bazm-e-Adab

Public speaking is a rewarding art that one acquires through sheer practice. The objective of having the Bazm-e-Adab is to create interest in public speaking in the students by instilling in them confidence, self assuredness and among presentation skills. Each semester members take part in intramural and external competitions and events.

Computer Science Society (CSS)

Computer Science Society was established to provide a platform for CIIT students to keep themselves updated with developments in the computing industry. For this purpose, software competitions and seminars are organized regularly. Our students are encouraged to acquire new skills by attending workshops and short courses in contemporary computing areas. Members have brought back several prizes won at competitions, held in other institutions.

Dramatics Club

An exciting variety of musical programs, exhibitions and dramas are organized by Dramatics Club, throughout the year. This provides fun time for students.

Electronics Society

Electronic Society provides opportunities to students to take part in internal, regional and national activities. It aims to develop the concepts of our students by linking theoretical knowledge to practical experience by executing many activities that are part of the Society's function. This greatly helps our students to carve a

niche for themselves in the market as professionals. The Electronics Society also organizes industrial visits as well as exhibitions to display electronics projects of the students.

English Literary Society

Effective speaking skills combined with sound knowledge are key ingredients to professional success. Providing assistance to students in developing English Language skills is the main objective of our English Literary Society, which is very active in various English language and literary activities on campus.

Fine Art and Photographic Club

The Fine Arts and Photographic Club was formed in 2001 to enhance the creative skills of students and develop their aesthetic sense. The Club focuses on sketching, poster painting, portraits, landscapes and photography.

Sports Club

Sports Club arranges all sorts of sports competitions to channel boundless energies of our students. It provides opportunities for sports enthusiasts to share their interests and participate in events. Sports Club organizes tournaments in Cricket, Football, Badminton, Table Tennis, Hockey and Athletics, etc. Besides regular sports activities in each semester, the club also organizes friendly, inter-campus matches from time to time.

Telecom Society

Telecom Society has been established to provide a platform to the students to pursue their interest in the field of telecommunication beyond academics. Through various Activities, this society aims to increase in its members. The understanding on dynamic developments taking place in the telecommunication industry and also understanding of ways and means to benefit from it. Core activity areas are participation and organization of seminars and exhibitions, establishment of career advisory centre for students and arrangements for jobs and internships.

Career Development Center

Wherever you are in your academic career, freshmen through PhD, we are here to help you navigate your career during your years at CIIT, from choosing a major, to exploring different career options, to finding internships, to looking for part-time and full-time employment through Career Development Center.

COMSATS Institute of Information Technology, through Career Development Center, aspires to cater to the personal, academic and professional needs of the students of CIIT.

The principal pivot around which the core dogma of CDC revolves is the veracity and actuality that careers are not established by mere degrees and diplomas. It is much more than that, much broader in spectrum and much holistic in disposition. At CDC, CIIT we tend to channel our vigor, energy and efforts for the career development of student in a way that they shine out to be an employee of an employer choice. For the said, we aim to initiate career development processes for students which embrace objects like career awareness, career exploration, career preparation, and work experience.

Our purpose is to expose the students to options that best fit their individual career needs. To that end, our services include:

a) Personal, Academic and Professional help
b) Part-time and full-time job listings
c) Internships and co-op opportunities
d) Personality Development
e) Job fairs
f) Etiquette workshops
g) Résumé and interview preparation
h) In-house training
i) Campus interviews and employer contacts

As they say a step at a time and in time marks the start of a journey. We are sure that this step will go a long way in developing the students of our institution. So we invite you to be a part of the saga and let's make the world dance to our own tunes We encourage you in taking the opportunity to meet our professional team face to face at the Career Development Center or during one of our many special events. Our team, programs, and resources are available to you every step of the way.

Welcome to Abbottabad

The natural climatically advantages of Abbottabad city, large land area, sports and recreational facilities and above all, a secure and friendly environment have all combined to make the Abbottabad campus more of a resort. The campus is and ideal place to study, live and work. The majority of the campus area encompasses parks, orchards, lush green grounds, blossoming flower beds and trees. Set in these environs with panoramic background view of Thandiani and Galiat mountains makes CIIT Campus Abbottabad, an awe inspiring modern day place of learning.

Location and Composition

Located north of Islamabad, Abbottabad is a town surrounded by lofty peaks and pine scented air. Among Pakistani cities, Abbottabad a small, neat, clean city and located in the spacious valley is a rarity.

Inspite of being separated from Mansehra and Haripur Districts, Abbottabad is a at a moderate distance from both the cities; giving an opportunity to the students to both these localities to enjoy the facility provided in the valley.

Apart from serving as the educational hub for the locality, Abbottabad also serves as a gateway to some most stunning sites in Northern Pakistan. With the very pleasant climate all around the year the scenic beauty of this town provides mind stimulating environment and vast turfs for all kinds of sports, including polo, football, hockey and golf.

Abbottabad Campus

The Abbottabad Campus became functional in July 2001, and the first academic session started in September 2001. This campus is ideally situated and built on 308 Kanals of land.

The first academic session started with student strength of 121 and only three undergraduate programs. Soon Abbottabad emerged as a leading institute of the region. Today it has eight departments, more than 5,000 students, 11 undergraduate programs, qualified faculty strength of 442 including 80 PhDs, and 42 modern laboratories. Our physical infrastructure emulates the best educational institutions of the country. The campus area also encompasses parks, orchards and grounds, the lush green grounds, blooming flowerbeds and trees.

The academic culture and environment are both challenging and exciting and since its start, the Campus has maintained a fast pace of development and is now an ideal seat of learning, research, and recreation. It has truly emerged as a regional leader in hands-on learning and innovation in many areas of science and technology.

Programs on offer at Abbottabad Campus

Department of Chemistry:

- MS and PhD in Chemistry

Department of Computer Science:

- MS in Computer Science

Department of Electrical Engineering:

- MS and PhD in Electrical Engineering
  Specializations/Focus Areas:
  Automation and Control Engineering (for PhD only)
  Power Engineering
  Telecommunication Engineering

Department of Environmental Sciences:

- MS and PhD in Biotechnology
- MS and PhD in Environmental Science
- MS in Sustainable Water Sanitation Health and
- Development

Department of Management Sciences:

- MS in Management Sciences
- MS in Project Management
- MS in Banking and Finance
- MBA (1.5 Years)

Department of Development Studies:

- MS in Development Studies

Department of Mathematics:

- MS in Mathematics

Department of Pharmacy:

- MS/PhD Pharmacy

Facilities

Accommodation and Housing

There are four on-campus hostel buildings to accommodate approximately 800 male and 150 female students. Our hostels have been established on international standards and contain central heating and cooling system, a mess, a gym, recreation rooms and round-the-clock security. Also, hostel rooms are spacious and made for comfortable living. Boarders have access to a 24-hour campus store and a mosque. CIIT hostels are managed by wardens who also look after the safety and security of students. Cultural and traditional norms are strictly followed in the hostels. A separate hostel for the faculty is also under construction.

COMSATS Community Development Unit (CCDU)

COMSATS Community Development Unit (CCDU) is an integral part of Abbottabad Campus. CCDU is engaged in the provision of quality consultancy services to different organizations in the specialized fields of management, organizational development, finance, re-structuring, Information Technology, software-development, assistance in the planning and implementation, monitoring and evaluation of organizational activities, and, importantly, in-house capacity building through the provision of specifically tailored training workshops.

COMSATS Technology Centre (CITC)

CITC is a well-sized technology concern having a large number of skilled professionals. CITC has a successful history of projects and a long list of satisfied clients. CITC promotes, develops, delivers and facilitates the use of Information Technology services and resources, including application and web development, data warehousing, network design and configuration, inter access, corporate training, multimedia solutions, and testing services.

Labs and Electronics/Computer Engineering Facilities

CIIT Abbottabad is maintaining seven major state of the art laboratories to facilitate students and keep them up with the latest technologies in the sector of electronics and engineering. These labs include digital logic/microprocessor lab, telecommunication / DSP lab, control/instrumentation lab, VLSI lab, Machine lab, and power systems lab.
(A detailed overview about various Labs and Research Group has been given in Chapter No. 3, Academics)

Library

Library is the most important facility at any educational institution. CIIT Abbottabad has provided its students with comfortable, spacious and peaceful environment in its library. It spreads over an area of 10,000 sft, contains over 25,000 books and is growing rapidly. It subscribes to more than 21 research journals and magazines. Computers have been provided for browsing the web and the digital library. Photocopy and bookshop facilities are also present at the library. The library remains open for students from morning till midnight.

CIIT library provides a wide range of up to date information using the latest reference and information techniques, as well as books and periodicals in relevant subject and interest areas. Library services include reference and information services, current awareness services, periodicals and newspapers, photocopying facilities, access to CD-ROMs, bookshop for students, cyber station (Internet), HEC digital library, etc.

Digital and E Library

The library is providing complete access to more than 32,000 high quality, peer-reviewed journals, conferencing proceedings and articles through 22 different online databases under the HEC's National Digital Library Program. Students and faculty can access these resources from inside and outside the campus through IP address and VPN respectively. At present access through Virtual Private Network (VPN) is only available to senior faculty. Later on this facility could also be offered for the use of students as per the policy of CIIT. In addition to 32,000 journals, the Library is also giving access to around 50,000 online books through 12 different databases that have also been made available through the HEC's National Digital Library Program. The e-books support program will allow researchers to access most of the important text and reference books electronically in a variety of subject areas. Apart from this there are more than 10,000 e-books on different subject areas are currently available on the CIIT E-Library which is in ever-growing/developing stage and will become more and more exemplary/perfect with the passage of time.

Cafeteria

The cafeteria remains open for students and faculty the whole day, seven days a week. To ensure quality and hygienic food, a students mess committee is formed which monitors menu selection and ensures quality of service.

Common Room for Girls

This space has been designed to give female students a place to relax, offer prayers, study, have informal discussions in free time available. Daily newspapers, magazines and periodical journals are available for reading. Female students appreciate this comfortable facility a great deal.

Career Development Center

The aim of Career Development Center is to support students in optimizing the value of their academic experience and in achieving successful transitions to the workforce and further educational endeavours. This center provides quality career development programs and employment-related services in order to empower students to actively engage in the integration and implementation of their academic and employment choices. This center develops positive faculty, staff and employer relations that result in access to career information and career opportunities for the students. The long-term objective is to achieve a high status among our competitors.

Extra Curricular Activities

Extra Curricular Activities are a vital part of any educational process. Sports, drama, creative writing, etc, all help individuals to develop balanced personalities by taking healthy breaks from academic rigors. Teamwork and competition also help in building character. Students' week is held annually at the campus. This week is dedicated to competitions and tournaments held among different classes and departmental teams. As a tradition, faculty and the student body enthusiastically participate in this weeklong event.

Clubs and Societies

Clubs and societies are very important for creative activities on campus. A large number of clubs and societies are active at the Abbottabad Campus. These societies are involved in literary, dramatic, scientific, software and photographic activities. The societies regularly organize poetry reading competitions, debates, quiz shows, concerts, Naat and Qirat competition, photographic competitions and scientific gatherings. Presently, Software Development Society, IT Society, Dramatics Society named as 'Funkada', COMSATS Literary Society, Bazm-e-Adab, Art and Painting Society, Photography Society, Qirat and Naat Society, Eco-Adventure Club, Cricket Club, Football Club, Athletics Club, Badminton Club, Table Tennis Club, Girls Sports Club, Volleyball Club, Green Thumb Society, Entrepreneurial Society are quite popular among students.

Welcome to Wah

The population of Wah is estimated to be over 500,000. Amenities include a garden said to have been built by the Mughal emperor Akbar in the 16th century.

Legend states that one of the Mughal Emperors, probably Akbar was on a journey to Kashmir. On the way, his caravan stopped at a spring in Punjab to quench their thirst. Remarking at the quality and purity of the water, Akbar said Wah! which has a similar meaning to the English word "wow". That spring became known as Wah and the city gets its name from this event. It is connected by road with Peshawar, Islamabad and Rawalpindi and is a growing industrial centre. Industries in Wah include one of the largest cement factories in South Asia, other than ordnance and tractor plants, and agricultural implements and spare-parts manufacturing. Nearby is Wah Cantonment.

Wah Campus

The opening of a new campus of COMSATS Institute of Information Technology in the historical and industrial town of Wah, was a joint effort of the CIIT and POF (Pakistan Ordnance Factories) Wah. CIIT started its campus at Wah in a record period of 70 days. The Minister for Science and Technology/Chancellor CIIT, formally inaugurated the Institute on September 14, 2001.

The Campus is situated on Quaid Avenue at the Mall, Wah Cantt. It is a place where people from all over Pakistan are exhibiting their unique skills. Due to its location, Wah is easily accessible to the students coming from Wah, Taxila, Rawalpindi, Hassanabdal and other surrounding areas.

Wah Cantt. is considered as the hub of industrial activity in the region. It is a place having high potential for the utilization of Information Technology and its incorporation in the industry. POF itself is a market with very high potential. A world class IT institute in the region has paved the way for knowledge and learning of IT, thus proving its worth and adding value to the region and to the country as a whole.

The campus was the first of its kind in Wah Cantt at the time of its establishment. It has a modern infrastructure and highly professional teachers. CIIT Wah is fully equipped to handle the dynamics of the fast paced IT industry and to meet the challenges of the future. Here the dedicated faculty ensures students to succeed and encourages them to benefit from the innovative education.

The Campus is housed in spacious buildings. The campus provides state-of-the-art facilities for the acquisition of knowledge and skills in the field of IT. A 20-year lease agreement was signed between POF and CIIT, in 2003 for renting two new academic blocks. The total area of the campus is 168,700 sft, whereas, the combined covered area of the two blocks is approximately 75,000 sft that are now operational to meet the ever-increasing requirements of an expanding campus. Currently more than 1,700 students are enrolled in the

disciplines of Business Administration, Computer Science and Electrical Engineering. For the establishment of a permanent campus the Institute has recently purchased a piece of land near Brahma Bahtar, Interchange on Motorway, M-1. The ground breaking ceremony was held on March 01, 2011. In the 1st phase one block will be constructed for Wah Business School which will accommodate 2,000 students and one Mosque for 500 persons.

Only 45 minutes drive from Rawalpindi, the campus is ideally suited for students who wish to seek education in a conducive environment.

Programs on offer at Wah Campus

Department of Computer Science

- MS in Computer Science

Department of Management Sciences

- MS in Management Sciences
- MBA (1.5 years)

Department of Mathematics

- MS in Mathematics

Facilities

Lecture Rooms

CIIT Wah has 22 spacious lecture rooms which are fully furnished, air-conditioned and nicely maintained. Teaching aids such as projector and multimedia facilities are available in every classroom.

Labs

Keeping in view the importance of practical training, Wah campus has established 10 modern computer and Electrical Engineering labs, which have around 330 state-of-the-art computers connected through LAN and WAN. Theses labs including Electronics (Analogue and Digital), Communication Engineering, Microprocessors, Control Engineering, machine labs, etc... have state-of-the-art equipment to give practical exposure to the engineering students. Proper lab manuals, attendance, quality assurance and supervision are ensured by the department during use of labs.

(A detailed overview about various Labs and Research Group has been given in Chapter No. 3, Academics)

Library

The library at Wah campus provides a wide range of up-to-date information using the latest reference and information, as well as books and periodicals in different subject areas. We are in close contact with leading book importers to ensure a proper and timely up gradation in library resources. There are over 15,500 hard copies of books and almost 5,500 non-book materials (CDs, Audio/Video).

Digital and E Library

The library is providing complete access to more than 32,000 high quality, peer-reviewed journals, conferencing proceedings and articles through 22 different online databases under the HEC's National Digital Library Program. Students and faculty can access these resources from inside and outside the campus through IP address and VPN respectively. At present access through Virtual Private Network (VPN) is only available to senior faculty. Later on this facility could also be offered for the use of students as per the policy of CIIT. In addition to 32,000 journals, the Library is also giving access to around 50,000 online books through 12 different databases that have also been made available through the HEC's National Digital Library Program. The e-books support program will allow researchers to access most of the important text and reference books electronically in a variety of subject areas. Apart from this there are more than 10,000 e-books on different subject areas are currently available on the CIIT E-Library which is in ever-growing/developing stage and will become more and more exemplary/perfect with the passage of time.

CU-Online (Campus Based Internet Services Setup):

Swift and efficient communication services are needed to connect to the rest of the world. This not only affects the sharing of knowledge and latest techniques but also makes the student aware of the advancements taking place in the world. CIIT Wah has developed its own ISP containing latest CISCO routers and fast-servicing equipment. CIIT provides this facility over the LAN. All these facilities are provided to our faculty, staff and students round the clock on Campus. This facility is being planned to be provided to the faculty and students at home as well.

Book Shop:

In any IT Institute, latest and updated editions of the subject books are a necessity. A formal bookshop is therefore present on the premises of the Campus where updated books are available at reasonable prices.

Extra Curricular Activities:

CIIT Wah provides an excellent academic atmosphere to its students. The faculty puts in maximum efforts to groom and nourish young scholars placed under their care. We at Wah try our best to contribute significantly to build healthy minds in healthy bodies. Many events are organized to involve young minds ensuring full participation in character building activities and personality development.

Adventure Club

Adventure club has been established at CIIT Wah that arranges a variety of outdoor activities. Different clubs have been created under adventure club such as hiking, trekking, photography, shooting, camping and rowing, etc.

Job Fair/ Placement

Wah Campus organizes annual job fairs and expos. Leading national and international companies and corporations, both public and private, attend these fairs to the graduating meet students and assess their skills. Through these fairs, our students have been hired for various important projects and to entry level positions.

The Wah Campus actively works for the placement of their students by strengthening the contacts between industry and CIIT. This give the students an opportunity to work on the latest technical problems and designs in their final year projects and to present themselves in effective manner before prospective employers. The campus guides its alumni to work in suitable areas of engineering and technology.

Visio Spark

Visio Spark, the computing gala, a tradition of Wah, provides an opportunity for young learners to polish their newly acquired skills. Every year Wah holds this exhibition in collaboration with local industry to display talents of CIIT students.

Lahore Campus

The Lahore Campus is located on Defence Road, Off Raiwind Road and is 30 minutes drive from the main city.

This campus was established in January 2002. The sprawling campus is purpose built and is spread over an area of 185 acres with constructed area of 420,000 sft.

The campus is equipped with state-of-the-art computers and electronics labs. During a short span of time, the continuous efforts of the dedicated faculty have made CIIT Lahore synonymous with academic excellence, which forms strong foundations for a bright career for its alumni. Here the young minds can really create a bright future for themselves.

The environment at the campus is vibrant, creative and challenging, for both teachers and students. The campus intends to excel in its research capability, which will open new frontiers of knowledge in Information Technology. In a city of learning as Lahore, the campus caters for the ever-increasing demands of students in the fields of Computer Science, Telecommunication Engineering, Computer Engineering, Chemical Engineering, Management Sciences, Physics, Architecture and Bio-Medical Material Sciences.

The campus consists of one administration block, five workshops, five academic blocks, a mosque, boys and girl's hostels and a number of residential units for the employees.

The location of the campus is strategically chosen to provide the students with an ideal environment, which is not only conducive for their educational pursuits but would also ensure that the students are well abreast of the latest developments in the IT sector.

The campus offers 30% seats to children of industrial workers free of cost, besides other scholarships.

Programs on offer at Lahore Campus

Department of Computer Sciences:

- MS and PhD in Computer Science

Department of Management Sciences:

- MS/PhD in Management Sciences
- MS/PhD in Economics
- MS in Project Management
- MS in Quality Management
- MBA(1.5 years)

Department of Mathematics:

- MS and PhD in Mathematics

Department of Physics:

- MS in Physics

Department of Electrical Engineering:

- MS and PhD in Electrical Engineering
  Specializations/Focus Areas:
  Telecommunication Engineering

Department of Chemical Engineering:

- MS in Chemical Engineering
- PhD in Chemical Engineering

Facilities

Accommodation

The campus provides hostel facility for both boys and girls students. The facility is available on first-come-first-serve basis and accommodates around 500 male students and around 300 female students. For further details, warden office on the campus may be contacted.

Transport

CIIT provides pick and drop services to facilitate the students and employees of the campus. Eleven Buses and Coaches have been arranged to provide this service between campus and inner city on subsidized rates.

Lecture Rooms

The campus has spacious 35 furnished lecture rooms. Each has a capacity for fifty or more students and is properly maintained. Most of these classrooms are furnished with multimedia facility for teaching purposes.

Labs, Computing and Networking Services

Computing and Networking Services (CNS) are charged with overall responsibility for the computing & networking infrastructure and technical support, necessary to sustain the campus programs, instructions, research and administration. In addition to providing many services directly, CNS also serves as liaison with other campus computing offices, including the ISP, which provides computing and networking services to the campus as a whole. There are 41 labs including 6 air conditioned computer labs, each equipped with fifty workstations with internet facility, along with server room have been setup at the campus. A number of multimedia and overhead projectors are also available.

(A detailed overview about various Labs and Research Group has been given in Chapter No. 3, Academics)

Library:

The Library functions as an information resource center for the campus. Students are encouraged to make full use of it. The library houses an open shelf collection that includes books, films, CDs, journals and newspapers. The library staffs provide one-on-one training and group instruction. If students need help in finding books, identifying authors or titles, the library staff is happy to assist. The library is open from morning till evening six days a week. Collections of more than 15, 000 books, 17 journals, 9 magazines along with CDs and videos have been provided for the students.

Digital and E Library:

The library is providing complete access to more than 32,000 high quality, peer-reviewed journals, conferencing proceedings and articles through 22 different online databases under the HEC's National Digital Library Program. Students and faculty can access these resources from inside and outside the campus through IP address and VPN respectively. At present access through Virtual Private Network (VPN) is only available to senior faculty. Later on this facility could also be offered for the use of students as per the policy of CIIT. In addition to 32,000 journals, the Library is also giving access to around 50,000 online books through 12 different databases that have also been made available through the HEC's National Digital Library Program. The e-books support program will allow researchers to access most of the important text and reference books electronically in a variety of subject areas. Apart from this there are more than 10,000 e-books on different subject areas are currently available on the CIIT E-Library which is in ever-growing/developing stage and will become more and more exemplary/perfect with the passage of time.

COMSATS Students Services (CSS) and Job Placement Cell (JPC):

CSS has been established at CIIT Lahore Campus to provide students with a range of services designed to help and assist them adjust to university life and to achieve potential in terms of their personal, educational, social and professional goals.

Highly skilled staff is specialized in providing students with comprehensive solution to their everyday problems including their adjustment to university environment, handling of academic as well as peer pressure etc. CSS achieves these goals through implementation of many programs, both within and outside the campus. CSS arranges many co and extra-curricular activities in order to bring the best out of students and prepare them to the rigors of competition and fair play.

The mission of Job Placement Cell (JPC) is to assist students in finding employment through a variety of services and also assisting them in locating employment opportunities. JPC offers students grooming sessions, job hunting skills, job data bank, resume development, interviewing skills and students profile directory.

Common Room for Girls:

A comfortable and spacious common room has been established in the Academic Block. This space has been designed to give female students a place to relax, offer prayers, study and have informal discussions in free time available. Daily newspapers, magazines and periodical journals are available for reading

.

Cafeteria:

The cafeteria is responsible for catering meals, snacks and beverages for the faculty, staff and students at reasonable rates. It has two portions, one for faculty and staff and the other for students.

Health Center:

To provide first aid and medical facilities to students and faculty members, a Health Centre has been established near the girls' hostel under the supervision of a qualified Resident Medical Officer.

Mosque:

Central mosque located between academic building and boys' hostel provides a serene facility for prayers including Juma congregation.

Extra Curricular Activities

Computer Science Society:

The Computer Science Society organizes seminars, quiz programs and other events related to computer sciences. Members of the society have represented the Institute at several forums and competitions, and have brought back honours & prizes.

Electronics Society:

The Electronics Society organizes competitions, quiz programs, seminars and other related events in the field of electronics. This is one of the most popular societies and has a regular activities calendar.

Prismic, Art and Culture Society:

This Society organizes art, drama, and singing competitions, seminars, quiz programs, debates, mushaira, naat and qirat competitions, movie shows and current affairs competitions. It promotes development of innate talents of students apart from academic excellence.

Sports Society:

The Sports Society organizes competitions in cricket, football, table tennis, badminton, basketball, chess and athletics. The Society facilitates both male and female students' participation in the sports events.

COMSMAG:

An annual magazine reflecting the whole academic year activities in a nutshell is a newest addition. The pages of the magazine depict the essence of artistic and academic abilities harboured by the students of Lahore. One Newsletter is a semester wise output that focuses on day-to-day milestones reached. It also highlights various events about various academic and extra-curricular purposes.

Seminars:

One of the key features of education at CIIT is a visionary approach of constantly providing practical exposure to the students regarding the course contents. To achieve this objective, guest speakers from corporate and industrial sectors are regularly invited to the campus in order to share their practical wisdom and experiences with the students.

Welcome to Attock

The city of Attock is the administrative centre and district capital of Attock District.

The District's climate is characterized by very hot summers and very cold winters. The maximum temperature reaches 40°C. The northern part is more humid, with a relatively moderate climate as compared to the southern part.
The river Indus flows on the western and northern sides of the district; the Haro River comes from Haripur and passes through the Attock on the north of the Kala Chitta Mountain Range. The land consists mainly of hills, plateaus, and dissected plains. The area north of the Haro River is a flood plain with fertile soil.

Attock District is located in the northwest of the Punjab province of Pakistan. The district was created in 1904 by the merger of Talagang tehsil from the Jhelum District and the Pindigheb, Fatehjang and Attock tehsils from Rawalpindi District of British Raj. The original name was Campbellpore district after Sir Campbell who founded the city of Campbellpore to the southeast of Attock Town. The name of the district was changed to Attock in1978.

Attock Campus

April 04, 2004 was a historic day for the residents of Attock city when a new Campus of the CIIT was launched, to make it possible for the students of the far flung and under developed areas to take advantage of the opportunities of state-of-the-art education. The event was important for both CIIT and Attock city because the dream of an IT institute was a distant dream come true. CIIT's presence in Attock has ensured the availability of professional academic skills not only to the locals of Punjab but also the adjoining areas of Khyber Pukhtoonkhawa. It throws open an opportunity to the city of Attock becoming a hub of burgeoning jobs and business ventures entirely on its own strength in the near future.

The Attock Campus has gained a commendable reputation in a short time. Attock's good teaching reputation ensures that brilliant academicians are attracted to work here. This subsequently enables our academic departments to offer innovative and exciting teaching environment, led by experts at the cutting edge of their varied specializations.

Program on offer at Attock Campus

Department of Electrical Engineering

- MS in Electrical Engineering
  Specialization/Focus Area:
  Communication and Radar Technology

Department of Management Sciences:

- MS Management Sciences
- MBA(1.5 Years)

Facilities

Higher education in emerging fields requires huge investment in infrastructure and facilities that are made available to achieve the international standards of education. Despite its young age, the campus has arranged adequate resources to facilitate the students, teachers and staff members. The campus is in a continuous process of progress and is making addition to its existing resources.

The detail of the resources is given as follows:

Lecture Rooms

All 9 lectures rooms are fully furnished, well equipped and well maintained. All modern teaching and learning aids are provided, with seating capacity in sufficient numbers to accommodate all students.

Labs and Network Department

An electronics lab equipped with latest test and measuring instruments/equipment has also been established at CIIT Attock. The LAN of CIIT provides high-speed Internet connectivity, printing and data storage facility. There are two general purpose computer labs, one project lab and three Electrical Engineering labs for the students. The labs are fully equipped with latest computers and with all the necessary facilities. All the labs are available throughout the week. Student Help Desk is always ready to provide friendly and expert guidance/assistance, so the students can make good use of most of the resources.

The Network Department is providing campus wide information & communication technology service, including but not limited to the Internet access. The Network Department is also providing corporate level technical consultancy to banks and various government department of district Attock. The Attock Campus was declared as a Cisco Local Academy in 2007. As a Cisco Local Academy the CIIT Attock is offering Cisco Certified

Network Associates (CCNA) certificate to its students. The program on the whole has presented a unique blend of advanced theoretical as well as practical sessions via latest interactive course curriculum.

Library

The library is airy, well lighted and provides an ideal place for quiet study and has around 4,200 books. Networked PCs provide access to a wide range of online journals, databases, CDs and library catalogues. The library's holdings are chosen mainly to support teaching and research on the Campus, but they also include some general books for leisure reading.

Digital and E Library:

The library is providing complete access to more than 32,000 high quality, peer-reviewed journals, conferencing proceedings and articles through 22 different online databases under the HEC's National Digital Library Program. Students and faculty can access these resources from inside and outside the campus through IP address and VPN respectively. At present access through Virtual Private Network (VPN) is only available to senior faculty. Later on this facility could also be offered for the use of students as per the policy of CIIT. In addition to 32,000 journals, the Library is also giving access to around 50,000 online books through 12 different databases that have also been made available through the HEC's National Digital Library Program. The e-books support program will allow researchers to access most of the important text and reference books electronically in a variety of subject areas. Apart from this there are more than 10,000 e-books on different subject areas are currently available on the CIIT E-Library which is in ever-growing/developing stage and will become more and more exemplary/perfect with the passage of time.

Computing Network:

On campus, every student is assigned a computer account and work space, allowing access to central computing facilities. The open access computers are connected to the campus network and to the internet. Computing, printing and technical assistance are available throughout the week. The computing service web page also provides useful information to make good use of computing facilities.

Mosque:

Prayers are held at our campus Mosque regularly. The sound of the 'Azan' adds a sobriety to our Campus atmosphere.

Cafeteria:

A proper cafeteria has been set up where quality eatables are provided to faculty and students at reasonable rates throughout the day.

Transport:

CIIT Attock provides pick and drop services to facilitate the students and employees. Two vehicles have bprovide this service between campus and surrounding area/inner city on subsidized rates.

Hostel:

The campus provides hostel facility for both male and female students separately and accommodates 50 males and 20 females. The accommodation is available on first-cum-first-serve basis.

Common Room for Girls:

A comfortable and spacious common room has been made available in the Academic Block. This space has been designed to give female students a place to relax, offer prayers, study and have informal discussions in free time available. Daily newspapers, magazines and periodical journals are available for reading.

Extra Curricular Activities

Sports

Students participate in many indoor and out door games including badminton, table tennis and cricket. Both male and female students actively participate in sports activities.

Seminars

Organization of seminars is a regular feature at Attock Campus. Seminars' content is mostly related to academic subject matters. These forums have always provided a good opportunity for healthy debates and discussions.

Funfair

Funfairs at the campus are organized annually. Students as well as outside vendors set up stalls to display food items, handicrafts, etc., which students set up semester projects. Sports activities and drama club events are also an integral part of these funfairs.

Welcome to Sahiwal

Sahiwal is a city in Punjab, Pakistan. This city was a small village on the Karachi-Lahore railway line in 1865 when it was named Montgomery after Sir Robert Montgomery, then Lieutenant-Governor of Punjab. It took its current name in 1966. It is the administrative centre of Sahiwal District and Division. The districts of Okara and Pakpattan are under Sahiwal division. Sahiwal lies approximately 180 km from the major city of Lahore and it is the biggest city between Lahore and Multan.

Location and Composition

The climate of Sahiwal district is extreme, reaching 52 °C in summer and down to 5°C in winter. The soil of the district is very fertile. The average rainfall is about 2000 mm.

The city lies in the densely populated region between the Sutlej and Ravi rivers. Irrigation in the region is provided by the Bari Doab Canal system. The principal crops are wheat, cotton, tobacco, legumes, and oilseeds. Cotton goods and lacquered woodwork are manufactured. About 18 miles Southwest of Sahiwal is Harappa, an ancient city of the world, oldest urban center of Harappan or Indus civilization in South Asia. About 28 miles (45 km) west of Sahiwal, at Kamalia, is the site of a Malli city captured by Alexander the Great in 325 BC. The people of Sahiwal are known as Sahiwalians. This city got his name from the first inhibitors of this city the Sahis (a jutt sub-tribe).

Sahiwal campus

The establishment of CIIT Campus in September 2007 at Sahiwal besides providing higher education facilities in the highly demanded market oriented disciplines also provided state-of-the-art facility for research and development in these fields. Sahiwal campus intends to augment the academic and socio-economic role in imparting quality education with the help of cutting-edge technology and contemporary managerial practices.

Sahiwal Campus has surfaced as the most vibrant educational institution in Sahiwal. It has been able to fetch the record high intake ever witnessed at any CIIT Campus for its pioneer batch. It started with the enrolment of 100 students with quite an attractive 30 percent ratio of female students. Currently, the campus has a total enrolment of 761 students.

Program on offer at Sahiwal Campus

Department of Management Sciences

- MBA(1.5 Years)

Facilities

Campus

The purpose built campus is being constructed on 36 acres of land with a consented area of 68,000 sft. Currently, there are 7 spacious lecture rooms equipped with all the modern facilities like multimedia, air conditioners and modern teaching aids.

Library

CIIT Sahiwal hosts a reference library with a more than 3,500 books, 15 journals and a number of CDs. It has a rich collection of latest publications on all the business related subjects. It is equipped with all the latest titles & issues, covering broad range of subjects. The library subscribes to both local and foreign newspapers and national and international periodicals, journals and magazines. In addition to latest issues of newspapers, the back dated issues of newspapers and magazines are also available on request. Library has a wide and diversified range of helping material for faculty members and students.

Digital and E Library:

The library is providing complete access to more than 32,000 high quality, peer-reviewed journals, conferencing proceedings and articles through 22 different online databases under the HEC's National Digital Library Program. Students and faculty can access these resources from inside and outside the campus through IP address and VPN respectively. At present access

through Virtual Private Network (VPN) is only available to senior faculty. Later on this facility could also be offered for the use of students as per the policy of CIIT. In addition to 32,000 journals, the Library is also giving access to around 50,000 online books through 12 different databases that have also been made available through the HEC's National Digital Library Program. The e-books support program will allow researchers to access most of the important text and reference books electronically in a variety of subject areas. Apart from this there are more than 10,000 e-books on different subject areas are currently available on the CIIT E-Library which is in ever-growing/developing stage and will become more and more exemplary/perfect with the passage of time.

Computer Labs

Sahiwal Campus offers the most modern computing facilities with the latest operating systems and software packages. A state-of-the-art computer lab has been established. Broadband Internet connectivity plays an important role in facilitating the faculty and students for academic as well as research and development activities. Students are provided with facility of free internet access. Computer lab is equipped with latest multimedia facilities like multimedia projectors, scanner, CD writers and printers.

Hostel Facility

CIIT Sahiwal has provided the students (60 males, and 20 females) with a furnished hostel where their stay is made quite comfortable. It caters for all those facilities that a student needs for a decent living. Keeping the safety, security and comfort of students in view, an effort has been made to allow students to fully concentrate on their studies on the one hand and ensure peace of mind for their parents living far away from them, on the other hand. Facilities provided at the hostel include clean and spacious rooms on sharing basis by two/three students, a dining hall equipped with requisite facilities, a recreation room equipped with TV, newspapers and internet, games facilities like carom-board, table tennis and badminton, adequate security facility, study room facility for fully concentrating on studies with conducive environment.

Extra-curricular Activities

CIIT Sahiwal provides numerous opportunities to its students for grooming them mentally and physically. These facilities include formation of clubs/societies which organize a wide range of different extra-curricular activities like adventure club, sports club, magazine committee, debating society, and many more.

Career Development Cell

CIIT Sahiwal has a Career Development Cell established since September 2007. This cell fosters liaison between academia and industry. Career development cell facilitates the students in internship and job placement. This cell also works for the training and personality development and is proactively engaged in arranging different seminars, workshops and fairs for the students in collaboration with public and private sector organizations.

Chapter 3
Academics

Faculty of Business Administration

Welcome Message by Faculty Dean

As the Dean-Faculty of Business Administration, I am delighted to share with you that COMSATS Institute of Information Technology (CIIT) has been at the forefront of research lead education and has played an active part in shaping the modern day higher education since its inception in 2000. Recently, the Higher Education Commission (HEC) of Pakistan has ranked CIIT, on the basis of Research Performance of Pakistani Universities, at number six among the 134 institutions of the higher education in the country.

The Faculty of Business Administration of CIIT, with its distributed network in the regional campuses, has correspondingly emerged as one of the leading Business Administration Faculty of the country that excels not just in research, but in bringing ideas to life and making knowledge work for its students, faculty members and a broader community. Our faculty's strength rests on the quality of learned faculty, actively involved in cutting edge research, making the institution a credible center of excellence both in quality teaching and research.

The Department of Management Sciences at CIIT, beside teaching and grooming of students, has always been a host to many eminent scholars and has institutionalized research as being a vital factor in its growth. In order to realize its mission of promoting and supporting research in the field of management so far a number of national and international conferences have been organized by the department over a short span of time. Along with this several research papers have also been published and presented in various national and international conferences and journals, with publications in HEC recognized journals and in international journals with impact factors.

If you would like to be a part of our team and take your role as one of the research scholars who will shape tomorrow's intellectual world, I invite you to join us at COMSATS Institute of Information Technology to keep pace with the expanding frontiers of knowledge and research training to address the concerns associated to existing local and global issues of society, economy and business world. Frontiers of knowledge and research training to address the concerns associated to existing local and global issues of society, economy and business world.

Faculty Dean
Prof. Dr. Syed Amjad Farid Hasnu
PhD (SME Management), University of Bradford, UK.

Departments:

The graduate programs, MS and PhD, are offered in the following departments of various campuses of CIIT:

Islamabad Campus
Department of Management Sciences

Abbottabad Campus
Department of Management Sciences
Department of Development Studies

Wah Campus
Department of Management Sciences

Lahore Campus
Department of Management Sciences

Attock Campus
Department of Management Sciences

Sahiwal Campus
Department of Management Sciences

Department of Management Sciences

Short Introduction:

The Department of Management Sciences offers professional graduate courses of study designed to provide competency in management and to acquaint the student with a variety of business activities. These programs are both decision and policy oriented and focuses on key aspects of modern business administration.

Subject Areas:

Six primary research areas have been proposed:

- ✓ Management Sciences
- ✓ Project Management
- ✓ Energy Management
- ✓ Strategic Marketing
- ✓ Banking and Finance
- ✓ Entrepreneurship & Innovation

Programs Overview

The Programs are widely recognized as the most appropriate educational qualification for future senior managers and executives. The Department of Management Sciences aims to provide a program, which is both educationally sound and directly relevant to such areas as industry, commerce, and public service etc. The overall objective of the MS Program is to develop managers and business leaders with the vision, knowledge, creativity, skills, ethics and entrepreneurial ability necessary to integrate dynamic and strategic view of organizations and to play an effective role within them.

The ability to think beyond the boundaries is characteristics sought by any forward thinking organization. It underpins the structure and content of our MS program. The MS program in Management Sciences is designed to prepare graduates for managerial and administrative roles in business, industry and government on the national and international levels. It also prepares students for a variety of leadership positions in complex contemporary business environments and teaching careers. Our

MS prepares the students not only for management but also involves them in the practical research for an in-depth study of a specific topic earning a MS degree. The MS program is divided into core and elective courses.

Special Features and Objectives

In developing the program, the Department has recognized that students may want to improve their job opportunities, change career direction or seek a fresh intellectual stimulus. Many are also looking for an enhancement of general business management rather than specialist skills. Increasingly from the employer's perspective, organizations are seeking future business leaders with improved good interpersonal skills as well as a well rounded perspective of various global issues. Businesses also want their employees to be exposed to a research driven environment which is capable of involving a range of business issues. It is also suitable for experienced professionals or fast-track managers who already have an MBA or related qualification and are seeking continued learning and progression in their field. CIITs' MS program is the ultimate professional business qualification and provides an accelerated route to a doctorate, enabling you to make a contribution to knowledge and practice through research.

The program enables you to contribute more towards the workplace and offers a higher intellectual platform to develop capabilities beyond those generally attainable through normal work. It aims to improve the ability to apply concepts to practice, to develop your thinking processes, increase writing skills and enhance professional credibility. The MS is designed to contribute to the sponsoring organization and to the development of the individual, in ways which cannot be gained by experience alone

Students will be supervised by leading CIIT academicians. In the first year you are supported by our research training program which forms the basis for the taught element of the program. As MS research is likely to be thematic rather than discipline based, candidates are supported by a panel of senior faculty members rather than a single supervisor, to ensure that most relevant support is provided.

Knowledge into action-a faculty with Management experience

One of our major strengths is our teaching faculty, which is the largest and most diverse of any business institution in the country. Most have managerial experience, a strength reinforced by close links with outside organization through consultancy and research. Our quality of teaching and learning is rated as excellent by the Higher Education Commission.

Excellent facilities:

COMSATS Institute of information Technology provides first-class teaching and learning facilities including lecture rooms, computer labs, a management information and resource center, and study areas for the small group discussions which are central to the learning process on both the BS and MS programs.

Faculty Members of the Department of Management Sciences

Islamabad Campus

Professors

- Dr. Khalid Riaz, PhD, Iowa State University, USA
- Dr. M. Tahir Masood, PhD , Virginia Polytechnic Institute and State University, USA, PhD Texas A&M University, USA
- Dr. Abdel Hamid Muhammad Nasr, PhD, Charles University in Prague, USA
- Dr. Muhammad Afzal, Chairman, PhD, Bahauddin Zakriya University Multan, Pakistan
- Dr. Qaisar Abbas, Post Doctoral, Cardiff University, UK, PhD HRD Nankai University Tianjin China

Advisor

- Dr. Muzaffar Ali Qureshi, PhD, Rensselaer Polytechnic Institute New York, USA
- Ghulam Haider, MS,University of Pittsburgh Pennsylvanian, USA
- Ajmal M. Qureshi, MSc, Boston University Boston, USA
- Javaid Zafar, M.Sc, Quaid-i-Azam University Islamabad, Pakistan

Associate Professor

- Dr. Zulfiqar Ali Shah, PhD, Manchester Business School, University of Manchester, UK

Assistant Professors

- Dr. Shahab Alam Malik , PhD, Graduate School of Chinese Academy of Sciences Beijing, China
- Dr. Amna Yousaf, PhD, University of Twente, Netherlands
- Dr. Muhammad Majid Khan, PhD, University of Massachusetts, USA
- Dr. Bashir Ahmed Fida, PhD, Shanghai University of Finance & Economics, China
- Dr. Muhammad Azhar Khan, PhD, Hokkaido University Sapporo, Japan
- Dr. Umara Noreen, PhD , Foundation University Islamabad, Pakistan
- Dr. Farrukh Nawaz Kiyani, PhD, University of International Business and Economics, Beijing, China
- Dr. Muhammad Zahid Iqbal, PhD, NUML Islamabad, Pakistan
- Dr. Iram A. Khan, PhD, University of Manchester, UK
- Dr. Husnain A. Naqvi, PhD, University of Dundee, UK
- Dr. Aurangzeb Zulfiqar Khan, PhD, German University of Administrative Sciences, Speyer (on leave)
- Dr. Malik Asghar Naeem, PhD, University of Hong Kong, China
- Dr. Uzma Javed, PhD, Cardiff University, UK
- Sarah Tariq, MBA Bahria University Islamabad, Pakistan
- Kamal Mustafa, MSc, University of Leicester, UK
- Muhammad Irfan, MBA, University of Bradford, UK
- Muhammad Mustafa Raziq, MBA, Blekinge Institute of Technology, Sweden (On Study Leave)
- Ghazala Amin, MS, Wayne State University Detroit, USA
- Saadia Zia, MS, Warwick University, UK
- Sabeen Khurram Khan, MBA, International Islamic University Islamabad, Pakistan (On Study Leave)
- Muhammad Khalid Sohail, MS, COMSATS Institute of Information Technology Islamabad, Pakistan
- Mansoor Ahmed, MA, University of Leeds, UK (On Study Leave)
- Waheed Iqbal, MS, Macquarie University Sydney, Australia
- Hanniya Abid, MSc, Middlesex University London, UK
- Imran Ghafoor, MS, CASE University of

Engineering & Technology Taxila, Pakistan

- Laeeq Hassan Jaswal, MBA, International Islamic University Islamabad, Pakistan Khalil-ur-Rehman Malik, MBA, University of London, UK
- Shahid Malik, MSc, University of Central Missouri Warrensburg, USA
- Mubashira Ghori, MS, National University Singapore, Singapore
- Usman Ayub, MS, COMSATS Institute of Information Technology Islamabad, Pakistan (On Study Leave)
- Aziz-ur-Rehman Khan, MBA, CAL State University Hayward, USA
- Yalman Zafar Ansari, MBA, Thunderbird School of Global Management, USA
- Asif Khurshid Mian, MBA University of Arid Agriculture, Pakistan (On Study Leave)
- Javed Iqbal, MSc, University of Gothenburg, Sweden
- Shahid Mehmood, MBA, Asian Institute of Technology, Thailand
- Malik Jawad Saboor, MSc, University of Strathclyde Glasgow, UK
- Hasan M. Ansari, MSc, University of Central Missouri, Warrensburg, USA
- Muhammad Tahir, MSc, University of Leicester, UK (On Study Leave)
- Ayyaz Mehmood , MBA (CIS) University of New Haven, USA (On Study leave)
- Asim Ali , MBA, International Islamic University Islamabad, Pakistan (On Study Leave)
- Talat Mehmood Kiyani, MS, IT University Copenhagen, Denmark
- Muhammad Shahid Iqbal MBA, College of Professional Studies, USA
- Jehangir Akhtar, MS, Indiana University Blooomington, USA
- Raza ullah Khan, MBA, Bahria University Islamabad, Pakistan
- Omer Farooq Malik , MBA, Bahria University Islamabad, Pakistan

Besides, 39 Lecturers and 14 Research Associates are also associated with this department

Faculty Members of the Department of Management Sciences

Abbottabad Campus

Professors

- Dr. Kh. Farooq Ahmad, PhD, University of Newcastle Tyne, UK
- Dr. Syed Amjad Farid Hasnu, Dean, Post Doctorate, University of Bradford, UK, PhD, University of Bradford, UK

Associate Professors

- Dr. Muhammad Mushtaq Khan Jadoon, PhD, University of Groningen, Netherlands
- Dr. Kashif Rashid, PhD, Victoria University, Melbourne, Australia
- M.A Nadeem Bukhari, MS, The Birmingham University Birmingham, UK

Assistant Professors

- Dr. Waseem Ikram, PhD, Victoria University Melbourne, Australia
- Syed Afzal Moshadi Shah, MBA University of Central England Birmingham, UK
- Muhammad Shafiq Gul, MBA, Agricultural University Peshawar, Pakistan (On Study Leave)
- Muhammad Waseem, MBA, COMSATS Institute of Information Technology Abbottabad, Pakistan
- Rao Muhammad Atif, MA, Islamia University Bahawalpur, Pakistan
- Osman Sadiq Paracha, MS COMSATS Institute of Information Technology, Abbottabad , Pakistan (On Study leave)
- Mansoor Nazir Bhatti, MS, University of Bedfordshire, UK
- Khalid Zaman, M.Phil, AIOU Islamabad, Pakistan
- Jamil Anwar, MBA, Shah Latif University Khairpur, Pakistan
- Muhammad Naveed Jan, MBA, Institute of Business Administration & Economics Lahore, Pakistan
- Zaheer A. Khan, MS, COMSATS Institute of Information Technology, Abbottabad , Pakistan (On Study leave)
- Tufail Ahmad Farooqui, M.Phil, University of Baluchistan, Pakistan (EoL)
- Immad Khan Jadoon, MS, COMSATS Institute of Information Technology Abbottabad, Pakistan
- Syed Gohar Abbas, MBA, University of Peshawar, Pakistan (On Study Leave)
- Aziz ullah Siyal, MS, Gomal University DI Khan, Pakistan (On Study Leave)
- Syed Fida Hussain Shah, MS, University of Bedfordshire, UK
- Ghias ud Din Shah, MBA, International Islamic University Islamabad, Pakistan
- Salman Ahmad, MS, University of Strathclyde Glasgow, UK (On Study leave)

Besides, 41 Lecturers and a Research associate is also associated with this department

Faculty Members of the Department of Management Sciences

Lahore Campus

Professors

- Dr. Talat Afza, PhD, Wayne State University, USA
- Dr. Ahmad Kaleem, PhD, University of Malaysia, Malaysia

Assistant Professors

- Dr. Abdul Haque, PhD, Huazhong University of Science & Technolgoy, China
- Dr. Waqar Akram, PhD, University of Sargodha, Pakistan
- Dr. Shabbir Muhammad Shahbaz, PhD, University of Malaya, Malaysia (On Study Leave)
- Dr. Waheed Akhter, PhD, NUML Islamabad , Pakistan
- Dr. Hafiz Zahid Mahmood, PhD, Humboldt_Universitat Zu Berlin, Berlin
- Abid Sharif, MBA, University of Hertfordshire, UK
- Sajid Nazir, MS, COMSATS Institute of Information Technology Lahore, Pakistan
- Ahsan Masood, MBA, University of Punjab Lahore, Pakistan
- Fahmeed Idrees, MBA, National University California, USA
- Tahir Aziz Khan, MSc, DeMont University, UK
- Rashid Waheed Qureshi, CMA, Institute of Cost & Management Accountants of Pakistan Islamabad, Pakistan
- Syed Khurram Ali Jafri, MS, Belkinge Institute of Technology Kalskorna, Sweden (On Study Leave)
- Nayyar Pervaiz Butt, MS, University of Lancaster, UK
- Muhammad Mohsin-ul-Mulk, MBA, University of Punjab Lahore, Pakistan (On Study Leave)
- Kamran Saeed Hashmi, MBA , Point Park University Pittsburgh Pennsylvania, USA (On Study Leave)
- Abdul Farooq, M.Phil , Quaid-i-Azam University Islamabad, Pakistan
- Imran Ali, M.Phil, Federal Urdu University of Arts, Science & Technology Islamabad, Pakistan
- Syed Nauman Ahmad, MS, Ryerson University Toronto, Canada

Besides, 63 Lecturers and 12 Research Associates are also associated with this department.

Wah Campus

Advisor

- Dr. Mushtaq Ahmed, PhD, University of NSW Australia/University of Wales UK

Associate Professor

- Dr. Saqib Gulzar, HoD, PhD, Harbin Institute of Technology Harbin, China

Assistant Professors

- Dr. Samina Nawab, PhD, Institute of Policy & Management Chinese Academy of Science Beijing, China
- Fahim A. Khan, MS, SZABIST Islamabad, Pakistan
- Ajmal Khan, MA, NUML Islamabad, Pakistan (On Study Leave)
- Amer, MBA, Hamdard University Karachi, Pakistan (On Study Leave)
- Ahsan Qamar, MS, University of Bridgeport, USA (On Study Leave)
- Safdar Nazeer, MPA, Quaid-i-Azam University Islamabad, Pakistan
- Naeem Taqi Jafri, MA, University of Punjab Lahore, Pakistan
- Adnan Tahir Qureshi, MA, Bahauddin Zakriya University Multan, Pakistan
- Saqib Bashir Butt, MS, SZABIST Islamabad , Pakistan
- Ayaz Ahmed, MS, SZABIST Islamabad , Pakistan
- Khurram Shafi, MS, International Islamic University Islamabad, Pakistan
- Malik Faisal Azeem, International Islamic University Islamabad, Pakistan
- Muhammad Ismail Khan, MS, COMSAT Institute of Information Technology Islamabad, Pakistan

Besides, 12 Lecturers and 3 Research Associates are also associated with this department

Faculty Members of the Department of Management Sciences

Attock Campus

Assistant Professors

- Dr. Muhammad Sajjad, PhD, Foundation University Islamabad, Pakistan
- Faisal Nawaz, MS, COMSATS Institute of Information Technology Islamabad, Pakistan
- Shaukat Amer, MBA, Gomal University DI Khan, Pakistan
- Subhan Ullah, MS, Lancaster University , UK
- Mohsin Ullah, MS, University of Peshawar, Pakistan

Besides, 20 Lecturers and 4 Research Associates are also associated with this department.

Sahiwal Campus

Associate Professor

- Dr. Rashid Saeed, University of Agronomic and Veterinary Sciences, Burchares

Assistant Professors

- Haroon Rashid, MBA, Maastricht School of Management, Netherland
- Muhammad Amir Rasheed, M.Phil, John Vianney Institute for Management and Development, University of Punjab Lahore, Pakistan (EoL)
- Muhammad Zia Hassan, MSc Quaid-i-Azam University Islamabad, Pakistan
- Rana Nadir Idrees, MS, University of Punjab Lahore, Pakistan
- Ali Ahmad, MA, Bahuddin Zakriya University Multan, Pakistan
- Suhail Afzal Qureshi, MSc, University of Agriculture Faisalabad, Pakistan
- Muhammad Fahad Hassan, MSc, University of Lancaster, UK (EoL)

Besides, 17 Lecturers and 2 Research Associates are also associated with this department.

Programs: MS/PhD in Management Sciences

Program	MS/PhD Management Science
Eligibility	4- year BBA with first division or CGPA of 2.5/4.0 or Master's degree with first division or CGPA of 2.5/4.0 in business administration, public administration, administrative sciences or some relevant discipline is required for admission in MS. For admission in PhD, MS with 70% marks or CGPA of 3.0/4.0 is required. All the previously obtained degrees should be from recognized institutions. A committee will also evaluate each applicant and decide on the elective course work required by each candidate towards his/her MS/PhD. The candidates who have certain basic deficiencies would be required to take up deficiency courses in addition to the already required courses.
Campus Offering	Islamabad, Wah (MS), Abbottabad (MS), Lahore and Attock (MS)

Specialization:

General Management /Finance
/Marketing
/Information Technology Management
/Business Economics.

Why to choose Management Sciences at CIIT?

The Master of Science in Management Science program offers a professional graduate course of study designed to provide competency in management and to acquaint the student with a variety of business activities.

Career Potential/Career Prospects:

On successful completion of the course the graduates will have an excellent opportunity in finding employment in areas with a broad, critical and practice-based understanding of Management Sciences & specialized disciplines. This knowledge makes them ready for a variety of leadership positions in complex contemporary environments and teaching careers in universities.

Program: MS (Project Management)

Program	MS (Project Manegement)
Eligibility	Minimum of sixteen years schooling (or equivalent) in a relevant subject: Business Administration, Computer Science, IT, Economics, Engineering, Natural Sciences, Public Administration and Policy, and Development Studies, with 2.5/4 CGPA (or 60% marks in annual system) and Excellent English communication skills.
Campus Offering	Islamabad, Abbottabad & Lahore

Why to choose Project Management at CIIT?

CIIT's MSPM program will help fill a major gap in project management education and research in Pakistan. It is a well known fact that vast sums of public resources are wasted due to mismanagement of projects, particularly in the social sector. Project failures as measured with respect to the non-attainment of its goal, and/or cost or schedule overruns are common in Pakistan. This problem is attributable in part to the lack of project management knowledge of the initiators, planners and implementers of projects as well as the lack of support from researchers in academia and profession who are supposed to highlight gray areas and suggest feasible solutions. Successful project management requires insight into several knowledge areas, for instance, communication management, risk management, cost and time management etc. Yet comparatively few project managers in Pakistan can claim that they have an adequate insight into all these areas. The dearth of project management education, training and research opportunities in Pakistan is the principal cause of this problem.

Career Potential/Career Prospects:

On successful completion of the course the graduates will have an excellent opportunity in finding employment in areas with a broad, critical and practice-based understanding of Project Management & specialized disciplines. This knowledge makes them ready for a variety of leadership positions in complex contemporary environments and teaching careers in universities.

Program: MS (Energy Management)

Program	MS (Energy Manegement)
Eligibility	Candidates eligible to apply belong to diverse backgrounds from engineering, technology, sciences, law, economics and management, who would like to build upon their competency in energy management subjects. Candidates must have demonstrated academic consistency and good performance, with at least 16 years of education with first division or CGPA of 2.5/4.0 and 60% marks in the annual system.
Campus Offering	Islamabad

Why to choose Energy Management at CIIT?

CIIT's MSEM is a terminal professional degree. Equipped with the knowledge imparted in the Energy Courses, the students acquire the capability to break new grounds and produce new knowledge if they undertake research work in the field of Energy Management. Besides, growing awareness about MEM has created a market demand where fresh entrants want to directly pursue MS degree in Energy Management. Keeping in view this, the Department of Management Sciences has planned to offer Master of Science in Energy Management (MSEM) with the option of course work based or research thesis based degree.

Career Potential/Career Prospects:

On successful completion of the course the graduates will have an excellent opportunity in finding employment in areas with a broad, critical and practice-based understanding of Energy Management & specialized disciplines. This knowledge makes them ready for a variety of leadership positions in complex contemporary environments and teaching careers in universities.

Program: MS (Strategic Marketing)

Program	MS (Strategic Marketing)
Eligibility	I6 years of Education in relevant field with 2.5/4 CGPA or 60% marks in the annual system.
Campus Offering	Islamabad

Why to choose Strategic Marketing at CIIT?

Strategic Marketing at CIIT allows students to develop skills in dealing with strategic marketing problems found in both profit and nonprofit settings. The focus is on a developing a framework for strategic marketing plans with emphasis on consumer and environmental analysis. Market segmentation, product positioning, marketing responsiveness, and competitive reaction will be explored. Furthermore, the programme will offer insights into modern strategic marketing, combining topical and practical knowledge with an emphasis on the ability to sense, shape and prepare to meet the needs of the future. Taking a strategic approach, it brings marketing into the 21st century, modernizing it and putting it on a more scientific footing, while reflecting upon major new and escalating challenges that confront business and marketing professionals.

Career Potential/Career Prospects:

On successful completion of the course the graduates will have an excellent opportunity in finding employment in areas with a broad, critical and practice-based understanding of Strategic Marketing & specialized disciplines. This knowledge makes them ready for a variety of leadership positions in complex contemporary environments and teaching careers in universities.

Program: MS (Banking and Finance)

Program	MS (Banking and Finance)
Eligibility	I6 years of Education in relevant field with 2.5/4 CGPA or 60% marks in the annual system. Candidates who have more than 5 years of professional experience may be exempted from GAT.
Campus Offering	Islamabad & Abbottabad

Why to choose Banking and Finance at CIIT?

The primary objective of banking and finance at CIIT is to develop knowledgeable and capable executives and workforce to move quickly to key positions in the financial services sector and to demonstrate the skills necessary to tackle problems within the complex world of international finance and banking. Also it is to prepare and implement findings directed at the evaluation of corporate, market, investment and risk management situations.

Career Potential/Career Prospects:

On successful completion of the course the graduates will have an excellent opportunity in finding employment in areas with a broad, critical and practice-based understanding of Banking and Finance & specialized disciplines. This knowledge makes them ready for a variety of leadership positions in complex contemporary environments and teaching careers in universities.

Program: MS (Entrepreneurship and Innovation)

Program	MS (Enterpreneurship and Innovation)
Eligibility	I6 years of Education in relevant field with 2.5/4 CGPA or 60% marks in the annual system.
Campus Offering	Islamabad

Why to choose Entrepreneurship and Innovation at CIIT?

CIIT's Entrepreneurship and Innovation program intends to train students on establishing organizations based on sound business rules and latest technological knowledge. The idea is to provide guidance in developing new ventures through knowledge exploration, innovative ideas leading to the development of new products; new markets .This program is tailored for those individuals who are interested in combining their science background with innovation and entrepreneurial thinking. Thus, potential candidates need to have an interest in developing their skills in analyzing and resolving issues within technological innovation and/or entrepreneurship.

The program imparts knowledge on innovative processes through exploiting innovative ideas and converting them into successful business. The students are further supported by the BDC (Business Development Center), which allows the young entrepreneur to nurture their budding ideas into reality. Students from Engineering, Management, IT and natural science are given a good platform in the various aspects of technology management allowing them to pursue a management or entrepreneur careers.

Career Potential/Career Prospects:

On successful completion of the course the graduates will have an excellent opportunity in finding employment in areas with a broad, critical and practice-based understanding of Entrepreneurship and Innovation & specialized disciplines. This knowledge makes them ready for a variety of leadership positions in complex contemporary environments and teaching careers in universities.

Program: MS in Quality Management

Program	MS (Qulaity Management)
Eligibility	I6 years of Education in relevant field with 2.5/4 CGPA or 60% marks in the annual system.
Campus Offering	Lahore

Why to choose Quality Management at CIIT?

This MS program in Quality Management is focused on the application of specialized managerial and technological skills to educate and prepare the human capital to guide the organizations to achieve the quality level demanded and needed at market place as a token of survival. This program also addresses strategic quality issues and leadership in establishing a total quality philosophy among the young professional which is a core essence of modern era's successful organizations.

Career Potential/Career Prospects:

On successful completion of the course the graduates will have an excellent opportunity in finding employment in areas with a broad, critical and practice-based understanding of Entrepreneurship and Innovation & specialized disciplines. This knowledge makes them ready for a variety of leadership positions in complex contemporary environments and teaching careers in universities.

Program: MBA (1.5 years)

Program	MBA (1.5 years)
Eligibility	Sixteen years of education with minimum 2 years of business education with CGPA of 2.5/4.0 or 60% in annual system. Excellent English communication skills NTS-GAT test score of 50%
Campus Offering	Islamabad, Abbottabad, Wah Lahore, Attock a& Sahiwal

Why to choose MBA (1.5 years) at CIIT?

The MBA curriculum has been designed to develop an in-depth understanding of all business functions. The curriculum the technical, data-driven, quantitative skills to make objective decisions with the interpersonal and communication skills necessary to work effectively with people at all levels and from all cultures. Most importantly, these topic areas are integrated throughout the curriculum to develop an understanding of all aspects of business. The one and a half year program will meet the increasing demand for advanced business education which will not only combine text book learning with case study methodology but will expose students to an environment which will facilitate development of their conceptual skills as well as personal growth. This program is offered to those have completed their 16 years of education.

Career Potential/Career Prospects:

On successful completion of the course the graduates will have an excellent opportunity in finding employment in areas with a broad, critical and practice-based understanding of Management Sciences & specialized disciplines. This knowledge makes them ready for a variety of leadership positions in complex contemporary environments and teaching careers in universities.

Program: MS/PhD Economics

Program	MS/PhD Economics
Eligibility	I6 years of Education in relevant field with 2.5/4 CGPA or 60% marks in the annual system. For admission in PhD, MS with 70% marks or CGPA of 3.0/4.0 is required.
Campus Offering	Islamabad (MS) & Lahore

Why to choose Economics at CIIT?

As the economy continues to expand and diversify, there is growing need for economic expertise for understanding various facets of this increasingly complex e system. Demand for well educated economics graduates comes from business, industry, academia, government and international development finance institutions. CIIT is well placed to play an important role in catering to these national and global needs by producing high quality economics graduates with MS and PhD degrees. The Graduate Program in Economics would aim to develop the best economics program in the country and in the region.

Career Potential/Career Prospects:

On successful completion of the course the graduates will have an excellent opportunity in finding employment in areas with a broad, critical and practice-based understanding of Economics & specialized disciplines. This knowledge makes them ready for a variety of leadership positions in complex contemporary environments and teaching careers in universities.

Department of Development Studies
Faculty of Business Administration

Short Introduction:

Being the premier institute of the region having mission and vision to achieve Sustainable Development in the region, COMSATS Abbottabad expanded its domain to encompass Development studies as a separate and distinct program of study along with the ongoing Engineering Programs. In view of the present trends and emerging needs of the disciplines, the institute established the department of Development Studies as a separate discipline during first quarter of 2004.

Development Studies is an interdisciplinary field. Contemporary themes of the subject encompass a wide array of ideas and perspectives both from an academic and practical standpoint. Emphasis is also placed on providing a sound basis for conceptual understanding of issues related to study of development policy with particular reference to Pakistan.

The degree is a recognized qualification for attaining jobs in development sectors, enhancing established careers and improving research expertise in the related fields. The degree builds the sound foundation and provides opportunities for specialized education for broaden the academic base to increase options and opportunities for appropriate jobs in private and public sectors in local, national and international arenas.

Program Overview

The MS in Development Studies core curriculum integrates substantive knowledge spanning the disciplines of social, environment, administrative and management sciences in order to foster the development of cross-disciplinary skills necessary to prepare students for the field of Development Studies. In addition, specific learning outcomes for the program identify essential knowledge and skills that each graduate should acquire throughout the course of the program. The MS degree program in Development Studies will be spread over 30 credit hours including 12 credit hours of core courses, 12 credit hours of elective courses and 6 credit hours of research thesis.

Program	MS in Development Studies
Eligibility	Masters in Development Studies with CGPA of 2.5/4.0 or Masters Degree/four years bachelor degree with 1st division or CGPA or 2.5/4.0 in social sciences, management/administrative sciences or other relevant disciplines.
Campus Offering	Abbotabad

Excellent Facilities:

COMSATS Institute of information Technology provides first-class teaching and learning facilities including lecture rooms, computer labs, a management information and resource center, and study areas for the small group discussions which are central to the learning process on both the BS and MS programs.

The ability to think beyond the boundaries is characteristic sought by any forward looking organization. This underpins the structure and content of our MS program. The MS graduate will be able to thrive in any world class corporate and competitive international environment.

Faculty Members

The department of Development Studies has well qualified, competent and energetic faculty, comprising of a number of PhDs & MS degree holders from Foreign / Pakistani universities.

Professors

- Dr. Shehla Amjad, Chairperson , PhD, University of Bradford, UK

Assistant Professors

- Dr. Bahadar Nawab Khattak, PhD, Norwegian University of Life Sciences, Norway
- Dr. Tahir Mehmood, PhD, Georg-August University, Germany
- Dr. Amber Firdous, PhD, University of Osnabrueck, Germany
- Dr. Zahid Hussain, PhD, Agriculture University Peshawar, Pakistan
- Nadia Baig Uzbek, M. Phil, University of Peshawar, Pakistan
- Abu Turab, MS, CIIT Abbottabad, Pakistan
- Ehsan Inamullah, MS, University of Hohenheim Stuttgart, Germany
- Noor Elahi, M.Phil, Quaid-i-Azam University Islamabad, Pakistan
- Salma Jabeen Awan, M. Phil

Faculty of Engineering

Welcome message by Dean Faculty of Engineering:

Engineering at COMSATS Institute of Information Technology offers unique opportunities for innovative education, and research. At CIIT engineering education was initiated in 1999 with single discipline and now, after more than nine years, engineering has grown beyond expectations having eight different engineering disciplines at undergraduate and graduate levels and many more are in progress. It has been consistently ranked among top eight Engineering Faculties of Pakistan by Higher Education Commission of Pakistan.

Since its inception, Faculty of Engineering has been active in recruiting outstanding new faculty members to support their teaching and research activities and we add significantly to this faculty base continuously. Under the umbrella of Faculty development program every year we send quite a few of our faculty members for higher education and short-term scientific and research training in well reputed International Universities. Our young and highly qualified Faculty members have tremendous potential to change the traditional way of thinking about engineering education, pedagogy and research excellence. I am convinced that as it continues to mature and expand it will emerge as an internationally recognized centre of excellence in the field of Engineering.

When it comes to career development and planning, students at COMSATS Institute of Information Technology are supported by marvelous services of our career development centers and advice from our newly-established Industrial Liaison offices at different campuses. The Industrial liaison offices work closely with career development offices to liaise with relevant employers in order to learn their hiring priorities and guide the students accordingly. These arrangements reflect CIIT's commitment to enabling all of our students to access the maximum possible range of career opportunities in engineering sectors.

We offer Graduate/undergraduate degree programs at different Campuses of CIIT in Telecommunication Engineering, Electronic Engineering, Electrical Power Engineering Computer Engineering and Chemical Engineering and Mechanical Engineering. Proposals for new programs in Civil Engineering and Bio-medical Engineering are in progress. We are also in process of launching few degree programs in collaboration with International Universities of very good repute. In support of research and training

Our newly developed campuses are equipped with state-of-art teaching and research labs, new libraries (one of the largest in the country), modern teaching aids and supplemented with wide range of facilities for extracurricular activities. Apart from educational excellence, we recognize that the choice of an institution is influenced by practical concerns such as location and cost.

Our past achievements are a source of pride to CIIT and many more exciting changes are planned for the years to come, the changes which are premeditated to ensure that the Faculty of Engineering at CIIT remains one of the leading Faculties nationally and internationally.

Best wishes,

Dean, Faculty of Engineering

Dr. Shahid Ahmed Khan
Professor of Radio-Communications
PhD (Radio Wave Propagation and Antennas) University of Portsmouth, UK

Departments:

The graduate programs MS and PhD are offered in the following departments of various campuses of CIIT:

Islamabad Campus

Department of Electrical Engineering

Abbottabad Campus

Department of Electrical Engineering

Wah Campus

Department of Electrical Engineering

Lahore Campus

Department of Electrical Engineering
Department of Chemical Engineering

Attock Campus

Department of Electrical Engineering

Department of Electrical Engineering

Introduction:

These programs in Electrical Engineering provide advanced education and research to develop knowledge & expertise in communications engineering. Strong emphasis is placed on the areas of mobile wireless communications, communication signal processing, broadband computer networks, RF/microwave engineering, optical communications, and embedded electronic system design for telecommunications. Specialized state-of-the-art laboratories and computer facilities are available in the above areas.

Subject Areas:

Eight primary research areas have been proposed:

- Computer Engineering
- Power Engineering
- Energy Engineering
- Electronic Systems Engineering
- Automation and Control Engineering
- Telecommunications Engineering
- Networks Engineering
- Communication and Radar Technology

Campuses Offering Programs:

- Islamabad
- Abbottabad
- Wah
- Lahore
- Attock

Research Activities, Facilities and Related Information Facilities:

The Department of Electrical Engineering at COMSATS Institute of Information Technology has the following Labs for research and development.

- VLSI/ Comp. Architecture Lab
- Microprocessor Lab
- Communication Lab
- Electronics Lab, Microwave Lab & Control Lab
- Project Lab, Graduate Lab & Networks Lab
- Radio Frequency Lab

These Labs have State-of-the-art software and hardware technology. We have latest software tools in these areas. The field of Computer Engineering encompasses both software and hardware. Our labs are well-equipped so that the students can take up research projects in any of the mainstreams of computer engineering. In addition to basic lab equipment we also have advanced equipment.

Research Groups:

Mobile Communication & Networks (MCN)

The advancements in Mobile Cellular Communications have revolutionized the concepts of connectivity, reliability and ease of communication. Mobile cellular networks have received wide spread approval and appreciation from masses. However, better Quality of Service (QoS) and resource management requirements have introduced several new challenges for researchers. The group aims to conduct research and development in areas of security, QoS, wireless resource management and mobility management in next generation cellular mobile networks.

Currently work is underway on Adaptive Call Queuing Schemes that prioritize resource distribution among new and handoff calls on the basis of call types (voice, multimedia calls) and user mobility.

Signal Processing for Wireless Communications (SPWCOM)

The Signal Processing Group develops signal processing algorithms that cover a wide variety of application areas including speech and image processing, wireless sensor networks, analog and digital communications, radar and sonar. Our prime focus is on algorithm development in general, with the applications serving as motivating contexts. Our approach to new algorithms includes some unconventional directions, such as algorithms based on fractal signals, chaotic behavior in nonlinear dynamical systems in addition to the more conventional areas of signal modelling, quantization, parameter estimation, sampling and signal representation. When developing new algorithms, we often look to nature for inspiration and as a metaphor for new signal processing directions.

The group aims,

- To develop new algorithms based on advanced filtering techniques.
- To take into account the probabilistic modeling in recognition algorithms
- To enhance the performance of MIMO OFDM systems.
- To develop recent research based CAD Models/Simulations.

Optical & Microwave Communication (OpticoM)

The Optical & Microwave Communications Research Group at CIIT Lahore undertakes research on a range of topics applicable to cutting edge wireless broadband and optical communications technology. Optical communication systems (OCS) have successfully rationalized in back bone transmission systems in terms of economic scalability, technology up gradation, protocol transparency, high data rates and logically independent hierarchical connectivity (WDM). Optical Communication is the only source to accomplish the up-coming high Bandwidth demands due to the advancements in Technology.

The key areas of research in Optical communication are WDM Passive optical networks, free space laser communication, high precision optical measurement technologies, and optical sensors, Free Space Optics (FSO), Fiber Channel Storage Area Networks, Fiber over Wireless (FiWi) networks, Radio-and-Fiber (R&F) and Radio-Over-Fiber (RoF). The research activities in Microwave communications are focused on multiple-element antennas and associated signal processing techniques, target recognition, Antennas Propagation, Microwave Filters, Mm-wave and Submm-wave (THz) antennas.

The major objectives of the OpticoM group are:

- To develop an open source graphical user interface (GUI) based software toolkit for the purpose of education, research and design of optical fiber communication systems.
- To study the cutting edge technologies in field of optical and microwave communication.
- To do research in latest developments in field of optical and microwave communication.
- To develop Computer Aided Design (CAD) models/simulations.
- To produce quality research publications.

Multirate Communication Networks (MRCN)

With the influx of the internet and multimedia applications in everyday life, the need for a cost effective solution, that offers reliable communication with higher data rates, cannot be overlooked. We can save extra cost and effort involved in setting up a new dedicated network by opting for the “No New Wires” solution for communication networks, such as the digital subscriber line (DSL) and the power lines. However these wireline media have their share of problems, including multipath signal propagation, crosstalk and high noise content in the channel. Application of multirate signal processing techniques/wavelet transforms in combination with multicarrier Modulation can be utilized to mitigate these channel impairments.

The greatest motivation for pursuing Wavelet Multicarrier Modulation (WMCM) systems lies in the freedom that they provide to communication system designers. By tailoring the design specifications, a wavelet based system that best suits an engineering requirement could be conceived. The group has the objective to design & hardware implementation of transceivers based on Multirate signal processing techniques and MCM.

The future directions for the group are:

- Design & Hardware Implementation of transceivers based on Multirate signal Processing techniques and MCM
- Wavelet OFDM for wireless communications
- Discrete wavelet Multitone for PLC & DSL
- Equalization techniques for discrete wavelet multitone modulation (DWMT) techniques

Computer Vision (COMVIS)

Computer vision research is becoming more and more essential for the technological advancement of a country with the increasing number of applications in civil, defence and industrial sector. Some of the key application areas of computer vision are in public security. In civil applications, one of the most prominent application fields is security e.g. surveillance, biometric authentication, forensic record analysis such as face, finger prints etc to assist in crime control.

The group has focus on primarily these application areas:

- Applied Basic Research in Image Pattern Recognition: fundamental issues in statistical learning.
- Biometric Recognition: individual identification by analyzing their physiological and behavioural characteristics, including face, iris, fingerprint, palm print, etc.
- Intelligent video processing and understanding: automatic video analysis and understanding to reduce human intervention in surveillance.
- Surveillance (tracking, identification, road safety)

- Object categorization and scene analysis in natural images (e.g. building extraction, object recognition, camouflage breaking, feature analysis)

Renewable Energy & Power Systems (REPS)

Renewable Energy & Power Systems research group is multidisciplinary group that fosters collaborative research efforts and advances in the areas of efficient and sustainable power system technologies. The group will develop fundamental and applied knowledge that is required for the next generation of low-emission, high efficiency power generation systems. The objectives of the REPS group are publishing of research papers, Starting of M.Sc in Power and Energy System, Industrial Projects & Collaboration, Seminars/Workshops on MATLAB, ANSYS, MEMS, AutoCAD, etc. Design and Implementation of UPS to generate, Micro-Power Using Jogging Machine Projects, Offering of Short Training Course (Power Distribution System Design), Development of Micro Grid Station at CIIT LHR using Renewable Technologies, Involvement of Undergraduate final year students in Implementation of Renewable Energy Projects (Photovoltaic System, Micro-Wind Turbine, Biomass, etc), To empower the CIIT students in design methodology of Power Distribution System.

Applied Basic Research in Image Pattern Recognition: fundamental issues in statistical learning.

Biometric Recognition: individual identification by analyzing their physiological and behavioral characteristics, including face, iris, fingerprint, palm print, etc.

Intelligent video processing and understanding: automatic video analysis and understanding to reduce human intervention in surveillance.
Surveillance (tracking, identification, road safety)
Object categorization and scene analysis in natural images (e.g. building extraction, object recognition, camouflage breaking, feature analysis)

Islamabad Campus Research Groups

Network Research Group

Network Research Group is focusing on broadband wireless and mobile networks. The issues of interest include mobility management, quality of service (QoS), radio resource allocation and performance evaluation in diverse wireless networks such as 3G/4G cellular, WLANs, WiMaX, Wireless Mesh, UWB, ZigBee and Bluetooth. The major emphasis is on protocol design, development and optimization. The research work is carried out using both analytical and mathematical modeling (Queuing Theory, Game theory, etc) and simulation modeling (OPNET, ns-2, OMNET++, MATLAB, etc).

Currently, our research is focusing on following issues:

- Mobility Management in Wireless Networks
- Radio Resource Allocation
- Quality of Service (QoS) Provisioning
- Queuing Theory and Tele-traffic Systems
- Protocol Design, Analysis and Development RF Network Planning and Optimization
- Channel Characterization and Modeling
- Mathematical and Simulation Modeling of Networks

Digital Systems Communication Research Group

The Digital Systems Research group was established in March 2009. The research in this group covers a wide range of activities including analytical, numerical and experimental work in both digital and analog aspects. The group is involved in a variety of research fields that are recent and future demanding areas. Over all number of publications are more than 10.
The group is involved in the following areas of research:

- VLSI Architectures for Video Encoders, Image Processing, Digital Signal Processing
- Intelligent Processing Algorithms
- Configurable and Extendible RISC Processor Architectures for Computationally Complex Applications such as Video Encoding, Image Processing, Digital Signal Processing, Computer Vision Algorithms. FPGA and DSP based Applications and Latest tools for Embedded Application Systems etc.
- Analog electronic circuits and systems: Analysis, design and implementation
- Filters and Amplifiers
- Microprocessor/microcontroller-based systems
- Industrial automations
- Data acquisition and measurements with database and GUI support

Image Processing Communication Research Group

The basic theme of establishing Image Processing group is to explore different areas of Image processing and computer vision. The research in this group mainly focuses on Biometric Recognition Systems that can be helpful to overcome current security problems.

Research is based on Segmentation and Normalization. In an iris recognition system Segmentation mean extracting the inner circular boundary (pupil) and outer circular boundary from an eye image. We proposed some new methods for both pupil segmentation and iris as well. Iris normalization is a process to transform the circular reign to rectangular so that the matching algorithms can easily be implemented regardless pupil dilation and the different iris size caused by the different distance between the eye and video zoom factor.

In face recognition, currently we are on making facial images illumination invariant, which is one of the most fundamental preprocessing step of any face recognition system. Since, achieving illumination invariance in the presence of large pose changes remains one of the most challenging aspects of automatic face recognition from low resolution imagery.

Analog Integrated Circuits & Systems Research Group

A research group is working under the name of Analog Integrated Circuits & Systems (AICS)

Core research area will be Analog and mixed signal Integrated Circuit Design including,
Low Power / Low Voltage Analog Integrated Circuits
High speed Data Converters
Integrated Circuits for Wireless Communication
Analogue Integrated Circuits and Systems (AICS) research group is organizing a video lecture series, along with interactive discussion among participants, with an aim to building suitable foundation in;
Analysis and design of Analogue Integrated Circuits in order to implement various systems
To initiate research activity under the umbrella of AIC

RF Communication Research Group

The basic aim to establish RF communication group is to explore the behaviours of transmission environment, design and analysis of antennas. Currently focus of this group is towards the antenna design and radio wave propagation. All the group members have research publications on various reputed forums. Above 60 publications are on the credit of group members.
Antenna Designing

Design of antennas for WiMAX, Wide Band, Ultra Wide Band and Multi Bands requires expertise in various technologies and simulation softwares. Single device handling multiple technologies is the need of the hour and for this purpose antennas operating at multiple frequency bands are required. For higher data rates, capacity and to accommodate larger number of users. Besides the compact design, bandwidth expansion is also required. Wide band and Ultra wideband antennas are suitable for such applications.

Currently, research is actively carried out in improving different antenna parameters and designing with focus on exploring
WiMAX
Wideband

Ultrawide Band
Multi Band
Radiowave Propagation

Tropospheric Propagation

Variations in the upward direction in the environment changes rapidly due to the variations of temperature, pressure and humidity. 10km above the earth level is defined as troposphere. Propagation in this sphere is affected by the scatter and attenuation due to the hydrometeors. We are exploring various kinds of losses in the troposphere.

Ionospheric Propagation

Solar radiations are the main cause of creation of the ionosphere the outer sphere is more affected by the radiation so its impact on the propagation of wave is more than any other layer. Moreover, day and night will create drastic changes in the environment and layers. Study of these changes with variation of different parameters is focused.

Faculty Members of the Department of Electrical Engineering

Islamabad Campus

Professors

- Dr. Shahid Ahmed Khan, Dean, PhD , Wave Communications University of Portsmouth, UK
- Dr. Shahzad A. Malik, Ph.D, Ecole Nationale Superieure des, Telecommunication, Paris France

Associate Professor

- Dr. Izhar ul Haq, PhD, Quaid-i-Azam University Islamabad, Pakistan

Assistant Professors

- Dr. Amir Hanif Dar, PhD, Beijing University, China
- Dr. Mustafa Shakir, PhD, Beijing University, China
- Dr. Imran Usman, PhD, PIEAS Nilore Islamabad, Pakistan
- Dr. Amir Mehmood Khan, PhD, University of Nice-Sophia Antipolis, France
- Dr. Syed Waqar Nabi, PhD, Institute for System Level Integration University of Glasgow, UK
- Dr. Safdar Hussain Bouk, PhD, Keio University, Japan
- Dr. Shahrukh Agha, PhD, Loughborough University, UK
- Dr. Muhammad Farhan Shafique, PhD, Leeds University, UK
- Dr. Abdul Wadood, PhD, University of Poitiers, Poitiers, Franc
- Dr. Shurjeel Wyne, PhD, Lund University, Sweden
- Dr. Nadeem Javaid, PhD, University of Paris, France
- Dr. Raja Ali Riaz , PhD, Southampton University UK
- Sajid Hussain Alvi, M. Phil, Quaid-i-Azam University Islamabad, Pakistan
- Syed Saud Naqvi, MS, Sheffield University, UK
- Omar Ahmed MS, College of E& ME, NUST Rawalpindi, Pakistan
- Muhammad Shuja uddin, MS, Oxford Brooks University, UK (On Study Leave)
- Faraz Janan, MS, University of Surrey, UK (On Study Leave)
- Babar Mansoor, MS, University of Leicester, UK
- Muhammad Bilal Qasim, MS, Chalmers University of Technology Goteborg, Sweden
- Irfan Latif, MSC, UMT Lahore, Pakistan
- Muhammad Fasih Uddin Butt , BS(On Study Leave)
- Rana Liaqat Ali, M.Sc, Quaid-i-Azam University Islamabad, Pakistan
- Azhar Yasin , MS, PTH Sweden, Sweden
- Muhammad Arshad , MS Oxford Brooks University, UK (On Study Leave)
- Zaffar Haider , MS, University of Liverpool, UK
- Tanveer H. Syed , MS, Auckland University of Technology, New Zealand(On Study Leave)
- Amina Qureshi , MS CASE Islamabad, Pakistan
- Zulfiqar Khalid, MS, Dalarna University, Sweden
- Muhammad Zubair, MS, University of Leicester, UK
- Khurshid N. Hashim , MS (On Study Leave)
- Tariq Bashir , MS, UET Taxila, Pakistan (On Study Leave)
- Tasawar Abbas Malik MS, Quaid-i-Azam University Islamabad, Pakistan
- Junaid Ahmed, MS, Oklahoma State University Stillwater, USA (On study Leave)
- Fozia Ayub, MS, UET Peshawar, Pakistan
- Irfan Ahmed, BS, Friends University, USA
- Riaz Hussain, MS, North Carolina State University USA
- Shafayat Abrar , MS, King Fahd University of Petroleum & Minerals (On Study Leave)
- Ahmed Naseem Alvi, MSc, Halmstad Universit, Halmstad,
- Sumaya Haroon, MSc, Johns Hopkins University Baltimore, USA
- Syed Tauqir Haider, MS, Engineering Auckland University Technology, New Zeeland
- Omair Inam, MS, Sheffield University, UK
- Khurram Saleem Alamgeer , MS MAJU, Islamabad, Pakistan
- Muhammad Aurangzeb Khan, MS International Islamic University Islamabad, Pakistan
- Zeeshan, MSc, PIEAS Islamabad, Pakistan

Besides, 77 Lecturers and 24 Research Associates are also associated with this department.

Abbottabad Campus

Professor

- Dr. Shahid Khattak, PhD, DAAD Germany, Germany

Advisor

- Mir Salim Ullah, MS, College of EM&E NUST Rawalpindi, Pakistan

Associate Professors

- Dr. Imdad Khan, PhD, University of Birmingham, UK
- Dr. Laiq Khan PhD, University of Strathclyde Glasgow, UK
- Dr. Mushtaq Afzal Golra, PhD, University of Manchester, UK

Assistant Professors

- Sajjad Durani, BS, NED University of Engineering Karachi, Pakistan
- Shah Riaz, MS, UET Peshawar, Pakistan
- Jamil Ahmad Khan, MS, UET Peshawar, Pakistan
- Sohail uz Zaman, MS, Lawrance Technology University, USA

- Naveed Ali Khaim Khani, MS, Institute National des Telecom Paris, France
- Aamir Islam, M.Phil, GC University Lahore, Pakistan
- Syed Ayaz Ali Shah, MS, UET Peshawar, Pakistan
- Zulfiqar Khatak, MS, UET Peshawar, Pakistan
- Irfanullah, MSc Anjum Hussain Shah, MS, UET Lahore, Pakistan
- Sifat Ali Fani, MS, UET Peshawar, Pakistan
- Muhammad Tufail, MS, UET Taxila, Pakistan
- Muhammad Ali Faisal, MSc, University of Sindh Jamshoro, Pakistan
- Owais Khan, MS, University of Sunder Land, UK (On Study Leave)
- Fazal Wahab Khan, MS, KTH Royal Institute of Technology Stockhen, Sweden (On Study Leave)
- Mukhtar Ahmad, MS, UET Lahore, Pakistan
- Akbar Ali Khan, MS, COMSATS Institute of Information Technology Abbottabad, Pakistan k
- Atiq ul Anam, MS, De La Salle University, Manila, Philippines
- Alam Zaib, MS, University of karlsruhe, Germany
- Sajid Aqeel Malik, MS, Delft University of Technology, Netherlands
- M. Tahir Khan , MS, UET, Taxila, Pakistan
- Abdul Majid, MSc, University of Peshawar, Pakistan (On Study Leave)
- Sadaf Saeed, M.Phil Quaid-i-Azam University Islamabad, Pakistan (On Study Leave)
- Saqib Mehmood, MS, UET Peshawar, Pakistan
- Ch. Arshad Mehmood, MSc, Sheffied University, UK
- Anjum Hussain Shah, MS, UET Lahore, Pakistan
- Muhammad Imran Shahzad, MS, Sussex University, UK
- Muhammad Fiaz, BS, University of Peshawar, Pakistan
- Dr. Abdur Rashid, Chief Engineer, PhD, Victoria University of Manchester, UK

Besides, 88 Lecturers and 1 Research Associates are also associated with this department

Lahore Campus

Professor

- Dr. Saleem Farooq Shaukat, Post Doctorate, East China University of Science & Technology, China, PhD, Optoelectronics Brunel University London, UK

Associate Professors

- Dr. Saleem Akhtar, PhD, Nationale Superieure des Telecommunications Paris, France
- Dr. Intesar Ahmed, PhD, University of Adelaide, Australia

Assistant Professors

- Dr. Muhammad Saqib Sarfraz, PhD, Technical University Berlin, Germany
- Dr. Ali Nawaz Khan, PhD, Harbin Institute of Technology, China
- Dr. Sobia Baig , PhD, GIK Institute of Engineering Sciences & Technology, Pakistan
- Haroon Ahmed Khan, MS, Esslingen University , Germany (On study leave)
- Hafiz Muhammad Asif, MS, King Fahd University of Patroleum & Minerals, Saudia Arabia (On study leave)
- Muhammad Ali, MSc, University of London, UK
- Muhammad Mubeen Masud, MS, Royal Insititute of Technology, Sweden
- Muhammad Haleem, MSc, University of Surrey, UK
- Muhammad Nadeem Rafiq, MS, University of Sheffield, UK (On Study leave)
- Syed Jawad Haider Gillani, MS, UET Lahore, Pakistan
- Ghulam Rasool Khokhar, BS, NED Karachi, , Pakistan (On study leave)
- Kashif Imran, MSc, UET Lahore, Pakistan
- Mirza Tariq Humayun , MSc, Eastern Mediterranean University TRNC Turkey (On Study Leave)
- Amir Rashid Ch, MS, UET Lahore, Pakistan (On Study Leave)
- Muhammad Farooq-i-Azam, MSc, University of Punjab Lahore, Pakistan
- Syed Khurram Zaidi, MSc, University of Leicester, UK

Besides, 50 Lecturers and 8 Research Associates are also associated with this department.

Wah Campus

Professor

- Dr. Muhammad Naeem,, PhD, School of Mechanical Engineering, Cranfield University, Cranfield, UK

Advisor

- Khaista Gul, M.Sc. Wayne State University, USA
- Dr. Muhammad Amin, PhD, UET Taxila, Pakistan

Associate Professor

- Dr. Rahim Dad Khan, PhD, Shanghai University of Science & Technology, China

Assistant Professor

- Dr. Sheraz Anjum, PhD, Institute of Microelectronics Graduate University of Chinese Academy of Sciences Beijing , China
- Dr. Nadia Nawaz, PhD, University of Essex, UK
- Dr. Shahzad Saleem, PhD, Graz University of Technology Graz, Austria
- Dr. Sajid Siraj, PhD, The University of Manchester, UK
- Mr. Fasih-ur-Rehman, MSc, Quid-i-Azam University Islamabad, Pakistan
- Badar Sulman, M. Phil, Quid-i-Azam University Islamabad, Pakistan
- Farooq A. Orakzai, MS, BTH Royal Institute of Technology Stockhen, Sweden
- Asim Aziz, MSc , Hogskolan Kalmar, Sweden
- Zahoor Uddin, M.Sc , Air University Islamabad, Pakistan
- Imran Ahmad Awan, MSc , NUST Islamabad, Pakistan
- Arbab Masood Ahmed, MSc, UET Taxila, Pakistan (On Study Leave)
- Muhammad Iqbal, MS, ICT Islamabad, Pakistan (On Study Leave)
- Zarrar Javaid, MS, NUST Islamabad, Pakistan (On Study Leave)
- Atif Amin, MSc, Darmstadt Germany
- M. Kamran Fiaz, MSc, University of Sussex, UK
- Sajjad Ali Haider, MSc, University of Lancaster, UK
- Amna Mahboob, MSc, University of Essex, UK
- Maliha Amjad, MSc, University of Essex, UK
- Aadil Raza, MSc , University of Sheffield UK

Besides, 31 Lecturers and 4 Research Associates are also associated with this department.

Attock

Assistant Professors

- Dr. Muhammad Altaf, PhD, University of Essex, UK

Besides, 4 Lecturers and 2 Research Associates are also associated with this department.

Program: MS and PhD in Electrical Engineering

Program	MS/PhD Electrical Engineering
Eligibility	Bachelor of Science in Electrical Engineering in related disciplines such as: Electrical Engineering, Electronics Engineering, Communication or Telecommunication Engineering and Computer Engineering or equivalent from an accredited institution with 2.5 CGPA or 1st division in annual system. Graduates from other engineering disciplines shall be eligible for this program subject to passing with minimum of "C+" grade (or 65% marks) the prerequisite courses as recommended by the departmental Graduate Advisory Committee at the time of admission. Graduates with a 16-year degree in Computer Science, Electronics, Physic or any related discipline shall be eligible for this program subject to passing with minimum of "C+" grade (or 65% marks) the prerequisite courses recommended by the departmental graduate Admission Committee. For admission in PhD, MS with 70 % Marks or CGPA of 3.0/4.0 is required.
Campus Offering	Islamabad, Abbottabad, Wah (MS), Lahore & Attock (MS)

Specialization:

- Computer Engineering
- Power Engineering
- Energy Engineering
- Electronic Systems Engineering
- Automation and Control Engineering
- Telecommunications Engineering
- Networks Engineering
- Communication and Radar Technology

Why to choose this course at CIIT?

MS Electrical Engineering program focuses on the topics ranging from fundamental techniques to cutting edge technologies in Electrical Engineering. Our primary aim is to provide a learning experience which maximizes our students' employability in a competitive job market and subsequently accelerates their career progression with an excellent preparation for PhD studies.

Career Potential/Career Prospects:

On successful completion of the course the graduates will have an excellent opportunity in finding employment in areas with a broad, critical and practice-based understanding of Electrical Engineering & specialized disciplines. This knowledge makes them ready for a variety of leadership positions in complex contemporary environments and teaching careers in universities.

Department of Chemical Engineering

The Department of Chemical Engineering was established in Fall 2005 at Lahore campus. Chemical engineers are involved in the application of knowledge gained from basic sciences and practical experience in the development, design, operation and management of plants and processes for economical and safe conversion of chemical raw materials to useful products.

The Department of Chemical Engineering aims to impart quality instruction in a research oriented atmosphere with excellent opportunities for personal and professional growth. The department combines academics with useful work experience as mandatory elements of the degree requirements.

The Department of Chemical Engineering is offering three areas of specialization which are of immense national importance. These are Textile Engineering, Environmental Engineering and Polymer and Rubber Technology. State-of-the-art laboratories have been established to carry out the most recent research and development in these three areas. The department also plans to launch full fledged programs in these areas as well as in Chemical and Materials Engineering in the near future.

Faculty Members of the Department of Chemical Engineering

Lahore Campus

Professor

- Dr. Robina Farooq, PhD, East China University of Science & Technology, China

Advisors

- Dr. Amjad Hussain Dilawari, PhD, University of London, UK
- Dr. Pervez Khalid Butt, PhD, Imperial College University of London, UK

Associate Professors

- Dr. Asad Ullah Khan, Chairman, PhD, Imperial College London, UK
- Dr. Nasir Mahmood, PhD, Martin Luther University Halle Wittenberg, Germany
- Dr. Moin Uddin Ghauri, PhD (Chemical Engineering), University of Sheffield, UK

Assistant Professors

- Dr. Anwar ul Haq, PhD, Ivanovo State University of Chemistry & Technology, Russia
- Dr. Muhammad Nadeem Kardar, PhD, University of Karachi, Pakistan (On Study Leave)
- Dr. Murid Hussain Malik, PhD, Korea Advanced Institute of Science & Technology, Korea (On Study Leave)
- Dr. Mazhar Amjad Gilani, PhD, Clausthal University of Technoilogy, Germany
- Dr. Zulfiqar Ali, PhD, Martin Luther University Halle Wittenberg, Germany
- Aqeel Ahmad Bazmi, MSc, Mehran University of Engineering & Technology Karachi, Pakistan (On Study Leave)
- Moazim Gulzar, MS, University of Engineering & Technology Lahore, Pakistan
- Javed Ahmad, MS, Dalhousie University Halifax, Canada
- Wajih Ur Rehman, MSc, Imperial College London, UK (On Study Leave)
- Abrar Inayat, MSc, Malardalens University Vasteras, Sweden (On Study Leave)

Besides, 38 Lecturers and 4 Research Associates are also associated with this department.

Department of Chemical Engineering
Faculty of Engineering

Programs:

MS and PhD in Chemical Engineering

Program	MS/PhD Chemical Engineering
Eligibility	BS in Chemical Engineering or Equivalent with 2.5 CGPA or 60% Marks in Annual System. For Admission in PhD, MS in Chemical Engineering or Equivalent with 3.0 CGPA or 70% Marks in Annual System.
Campus Offering	Lahore

Specialization:

- Oil and Gas production and processing.
- Environmental Technology
- Polymer and Rubber Technology
- Bio-Chemical Engineering
- Textile processing

Why to choose this course at CIIT?

The Department of Chemical Engineering offers a competitive degree in a rapidly expanding area of study. Our strong faculty and excellent facilities ensure that students have solid technical grounding in their subjects, and to apply this knowledge in practical work settings.

Career Potential/Career Prospects:

On successful completion of the course the graduates will have an excellent opportunity in finding employment in areas with a broad, critical and practice-based understanding of Chemical Engineering & specialized disciplines. This knowledge makes them ready for a variety of leadership positions in complex contemporary environments and teaching careers in universities.

Faculty of Information Sciences & Technology

Welcome Message by Dean Faculty of Information Sciences & Technology

Welcome to the faculty of Information sciences and technology. True to our claims we dare say that our Faculty of Information Sciences and Technology has all the hallmarks that ought to be present in to-day's competitive world. Our dynamism to adapt to the changing times in respect of our courses, hiring of the requisite faculty and nearly dogged pursuit of our students after they have left our doors till they get good jobs is a pride of ours. We also strive to give atmosphere to our students where they feel at home not only in satisfying their academic queries we cater to their non non-academic needs such as admissions, career counseling, job hunting and above all make them people of principles and letters.

Information Science is a unique area in many respects. We have a unique faculty & graduate program structure. The faculty has special connections with leading industries. The faculty is committed to interdisciplinary research. Computer Science departments are intensely involved in joint projects with faculty members in other departments producing world class research. The proof of this commitment is publication of papers in journals and conferences of international repute.

Our mission of the multidisciplinary Health Informatics Program is to “develop health care systems as information environments." A useful model of the emergence of informatics is to consider different roles of clinicians, management and IT services in health care. Health Informatics is the science of information management in healthcare and its application to support clinical practice, decision-making and research. Health Informatics is a body of knowledge and a set of techniques to organize and manage information in support of research, education and patient care.

I wish you best of luck.

Dean, faculty of Information Sciences & Technology
Dr. Sajjad Mohsin, (PhD)

Departments:

The graduate programs MS and PhD are offered in the following departments of various campuses of CIIT:

Islamabad Campus

Department of Computer Science
Health Informatics Unit

Abbottabad Campus

Department of Computer Science

Lahore Campus

Department of Computer Science

Wah Campus

Department of Computer Science

Department of Computer Science

The objective of offering graduate programs in Computer Science is to provide an opportunity to enhance the knowledge of all those who have good scholastic background in Computer Science or related disciplines. It is a platform for them to work in and explore further their areas of interest.

Career Potential/Career Prospects:

The objective of offering MS/ PhD in Computer Sciences is to provide an opportunity to enhance the knowledge of all those graduates who have good scholastic background in Computer Science or related disciplines. It is a platform for them to work in and explore further their areas of interest. The course is tailored in a way that it covers state-of-art concepts in the realms of computer science, careers in academia careers in research, careers in industrial research projects.

Why Computer Science at CIIT?

The courses are tailored in a way that it covers state-of-the-art concepts in the realms of computer science. On successful completion of the course, graduates will have skills that are attractive to employers and have a solid foundation for contributing to future software design and developments and pursuing research in the field of computer science.

About the Graduate Programs:

The graduate program comprises of Master of Science in Computer Science (MSCS) and PhD in Computer Science. The MSCS Program is no doubt a specialization track for the students to progress in their desired fields. The Specialized tracks comprises of Computer Networks, Artificial Intelligence, Real-time Systems, Database systems and Data mining, Semantic Web Engineering and Embedded systems etc. The backbone of Cs department is its Research. We encourage young Scholars to undertake research challenges in order to compete in the modern world. Many of the researchers working under Cs have produced quality research articles in impact factor journals as well as high reputed international conference. Indeed, computer science is the present and future of mankind and compel in this epoch of invention in it is the right choice to be made!

Subject Areas:

Eight primary research areas have been proposed in Computer Science:

a. Database Systems
b. Business Intelligence
c. Artificial Intelligence
d. Software Engineering
e. Semantic Web and Service Engineering
f. Computer Networks
g. Multimedia Technologies
h. Computer Graphics and Visualization

Facilities

The well equipped Computer Labs and other practical facilities are open to carry out research work. A high bandwidth connection of Internet is available round the clock over wired and wireless LANs. This connectivity becomes further productive when research scholars use HEC sponsored access to digital libraries and numerous research journals.

Sun Lab - An Investment into Future

CIIT is proud to be the first academic institution in Pakistan who has built Sun Lab for this purpose. In order to meet the academic objectives, CIIT has an overall 54 Sun computers installed at its different campuses. These computers include specialized servers and desktop machines. This computing facility is being used in various undergraduate and graduate programs in each campus.

The Solaris-9/10 based Sun lab is equipped with 2 Sun-fire-V240 servers, 10 Sun-blade-150 workstations, with N1 grid engine, for grid computing.
These computers run various software needed for normal computations or distributed computations. This includes Java, C/C++ Compilers, MPI, Web and Directory and Message Queue servers, Java 3D APIs, XML, RFID software, Globus Toolkit and Sun Grid Engine for GRID computing; along with many other desktop applications.

CIIT Computational Cluster Research Project (CCCRP)

High-performance computing clusters have gained the attention of researchers, scientists, and analysts since the release of the first parallel computing environment, Parallel Virtual Machine (PVM). Today, Computing Clusters are changing the economics of High performance Computing, offering opportunities to those interested in building HPC solutions. The CCCRP is an effort to provide researchers with a facility that allows them to study the dynamics of cluster based computing and to carry out software development projects in the area of parallel computing. The project was aimed at setting up a modest (40-50 GFLOPS/sec) computing cluster using commodity-of- the-shelf (COTS) components. For this purpose, normal COTS components were purchased, in-house assembled and connected. Later, they were tuned up to work together in a single logical unit. So far, we have achieved 250GFLOPS/sec and further expansion in terms of hardware and performance is underway.

The facilities in other departments like Electronics Lab, Microprocessor Lab, VLSI Lab, DSP Lab and library facilities are also accessible to pursue research work.

Embedded Software Lab Facilities

The Embedded Software Lab, based at the Computer Science department, facilitates software development for embedded systems. The laboratory contains embedded kits with varying processing power and available resources. These include kits with and without memory management unit and also the DSP processor based kits. All of these kits run a variant of Linux as the core embedded kernel. Therefore students learn the embedded development environment through student projects. The experiments done over the Intel based systems will be deployed to the embedded kits.

The embedded system industry finds very difficult to get fresh graduates who can, without any prior training, be deployed to work. This is due to the fact that neither Computer Engineers nor Computer Scientists are trained for the embedded software development. This laboratory provides a unique facility of its kind at COMSATS whereby the students of Computer Science learn the embedded software development and can be productively employed at embedded systems industry.

CERN Collaboration

CERN, the European Organization for Nuclear Research, is one of the world's largest and most respected centers for scientific research. At CERN, the world's largest and most complex scientific instruments are being used to study the basic constituents of matter the fundamental particles. By studying what happens when these particles collide, physicists learn about the laws of Nature. The instruments used at CERN are particle accelerators and detectors. Accelerators boost beams of particles to high energies before they are made to collide with each other or with stationary targets. Huge array of detectors observe and record the results of these collisions. Founded in 1954, the CERN Laboratory sits astride the FrancoSwiss border near Geneva. It was one of Europe's first joint ventures and now has 20 Member States. Study of huge collision data needs excessive computing resources which will be arranged by using Universal grid, of which CIIT setup is a part. In February 2009, COMSATS is listed among the grid computing sites for ALICE Experiment.

Department of Computer Science - Abbottabad Campus

The objective of offering MS/PhD in Computer Science is to provide an opportunity to enhance the knowledge of all those graduates who have good scholastic background in Computer Science or related disciplines. It is a platform for them to work in and explore further their areas of interest. The course is tailored in a way that it covers state-of-the-art concepts in the realms of computer science. The department of Computer Science is offering MS for full time students.

Computer Science is a unique department in many respects. We have a unique faculty/graduate program structure. The

High-performance computing clusters have gained the attention of researchers, scientists, and analysts since the release of the first parallel computing environment, Parallel Virtual Machine (PVM). Today, Computing

Clusters are changing the economics of High performance Computing, offering opportunities to those interested in building HPC solutions.

COMSATS Institute of Information Technology Islamabad campus possesses an in-house commodity-of- the-shelf (COTS) components 64-nodes PC-based 256 GFLOPS cluster.

Software

- OSCAR
- ROCKS

Hardware

CPU Type	Intel ® Pentium ® 4
Clock Speed	3 GHz
Node Count	64
Sockets/Node	1
Cores/Socket	1
CPU count	64
R peak	385 GFLOPS
R max	245 GFLOPS
Memory/Node	1 GB
Interconnect	Ethernet Gigabit

department has special connections with leading industries. The department is committed to interdisciplinary research. The CS department is intensely involved in joint projects with faculty members in other departments of the Campus. The Computer Science Department educates students in the discipline of computer science and teaches them to apply their education to solve practical problems in a socially responsible way.

In all of the department's programs, laboratory experiments ensure that students have both theoretical and practical understanding of computer science.

The CS Department has excellent faculty and a strong research record in traditional and emerging areas of computer science and continues to grow at a rapid pace in terms of research funding, publications and national and international service and recognition.

The research publications point to the high quality of our graduate program, which enhances the success of our graduates at all levels.

Department of Computer Science - Islamabad Campus

With the emergence of digital era, the world has literally changed the way it functions and computer has played a big role in the transformation. Not only, it has made our life easier but also became a prime source of lucrative career for a number of talented people, in addition to be calling computer genius. If this all fascinates you and want to explore the frontiers of information technology, then Department of Computer Science COMSATS Institute of Information Technology Islamabad is the place for you.
The Department of computer Science CIIT has always opened new portals towards emerging technologies; these portals are good enough to mesmerize individuals into the realities and wonders of computer world. Our talented faculty members not only lecture out their knowledge and perception to the students, but also motivate them to be intellectuals and professionals in their approach. This Scholastic attitude increases the urge of students to seek more and improvise their knowledge for future benefits of computer science. With no air and graces CS Department has a depth of sixty (60) faculty members in total, in which thirty percent (30%) are PhDs. The number of PhD in CS department is increasing gracefully which further strengths a promising future of novelty.

Research Areas

The research opportunities in the fields of Databases, Networking, Software Engineering, Artificial Intelligence and parallel/distributed computing using cluster/grid are available.

Database Systems

Research area in this field will focus on the issues related to distributed databases, object-oriented databases, spatial databases, multimedia databases, data warehousing and data mining. A special interest group explores the concepts and techniques of data mining, a promising and flourishing frontier in database systems and new database applications. The main focus is on issues related to feasibility, usefulness, efficiency, and scalability of techniques for the discovery of patterns hidden in large databases.

Artificial Intelligence

The goal of the Artificial Intelligence Group is to persuade intelligence in all its components by promoting excellence in basic research. We aspire to attain outstanding performance by investigating the mechanisms underlying intelligent behavior and by creating intelligent artifacts. It is our firm belief that our goals can only be achieved by creating an open and free atmosphere that enables researchers to fully exploit their potential. In the field of intelligence this requires an interdisciplinary and international mixture of students/researchers/staff and globally networked co-operations with top research institutions. Moreover, we seek to motivate and teach students at all levels.

Business Intelligence

Business Intelligence (BI) refers to technologies, applications and practices for the collection, integration, analysis, and presentation of business information. It supports better business decision making by executives and related persons. BI systems deal with Data Warehousing, OLAP, Data Mining, Web Housing, Web Mining and Knowledge Warehousing technologies. The aim of this novel discipline is to educate and disseminate knowledge in the process of research & development to satisfy the country's current requirements.

Computer Graphics and Visualization

The penetration of Computer Graphics is evident in every corner of today's growth industries. It is used extensively in television, motion pictures, architecture, art, computer-aided design, games, simulation, modeling, visualization, telecollaboration, and interactive illustration. This is because of huge demands for prototyping tools for 3D modeling, sophisticated scientific visualization, and the need for widely dispersed groups in R&D, management and anywhere else where visual data plays an important role. This field at the Department of Computer Science includes vast opportunities for creativity and research in the domain of modeling, rendering, simulation, user interfaces and high-performance architectures along with geographic information systems.

Computer Networks

A major research area of the Department of Computer Science at Islamabad is the study of latest trends in computer networks. This promising field has groups exploring issues in wireless sensor networks, mobile ad-hoc networks, vehicular area networks and delay tolerant networks. Extensive simulation studies of routing protocols are undertaken and results are presented in national and international conferences. A special interest group focuses on the security issues in wireless networks exploring vulnerability issues such as malicious behavior detection, damage control in the case of node capture, security of group membership schemes and various message authentication schemes where access to a central authority is not possible. On the practical side, a collaborative arrangement with the Wildlife Department of Government of Pakistan, a project to tag wild animals with sensor nodes for monitoring their health and habitat has been initiated.

Multimedia Technologies

Multimedia Technologies is the fastest growing field in the current era. In today's crowded entertainment marketplace, consumers seek out multimedia and digital media as a replacement for traditional analog media and older forms of entertainment. This promising field has the expertise to provide strategic guidance to propose and implement new ideas, thus keeping abreast of technology and market trends. Major focus of this field is on the research of Multimedia Communications and Broadband Systems, Animation, Systems Design as well as Multimedia Publishing. There is a huge market of graduates in the field of multimedia including gaming, desktop and web publishing, interactive digital media and visual effects.

Software Engineering (SE)

Software Engineering is one of the biggest growing fields now days, as it has all the possible applications to related fields. Applications of the Software Engineering in the natural sciences like Chemistry, Physics, Biology, and other spheres of life too is a proven factor. The road map themes of research group software engineering (SE) are working with estimation (metrics) to functional as well as non functional requirements that is working in estimation to analyse design, quality attributes, risk management aspects oriented metrics and project management strategies. Planning and hence developing quality research applications, activities based on hypothesis, practices and discussions is the main focus of this group.

Semantic Web and Engineering Services

Semantic Web Services is one of the emerging fields which focus on complex yet better web applications, global databases and re-use of information. This research-based graduate program includes topics in Data Mining; Web Mining, Semantic Web and

E-Services for Business Integration. This program provides students with the sound grounding of scientific, methodological and technological fundamentals in Engineering Services and Semantic Web areas. The knowledge can later be used to integrate, combine and infer heterogeneous and distributed information.

Facilities

The well equipped Computer Labs and other practical facilities are open to carry out research work. A high bandwidth connection of Internet is available round the clock over wired and wireless LANs. This connectivity becomes further productive when research scholars use HEC sponsored access to digital libraries and numerous research journals. Details of facilities can be seen on under the heading of facilities and introduction of Computer Science department.

Department of Computer Science - Lahore Campus

MS program in Computer Science at CIIT, Lahore is challenging and rewarding, providing training in research that enables you to develop real skills in research, or application design and implementation-skills that enable our students in career development or in subsequent PhD study.

Computer science is increasingly concerned with the application of core techniques and methods to challenging real-world problems, for examples, in medicine, environmental modeling, biological sciences and engineering design to name but a few. This shift in emphasis is reflected in the research we conduct and in the postgraduate programs we offer.

The MS in Computer Science is a quality research program which draws upon a renowned reputation of excellent quality research. It also depends upon the exceptional teaching quality and facilities of the Computer Science Department at the CIIT Lahore. Industrial links enable us to provide a broad based program at a level beyond that of undergraduate degree. The program combines a wide range of taught advanced courses, with a research project undertaken in the institute or in industry.
The MS program aims to impart a sound understanding of the general principles of Computer science. It provides sufficient breadth and depth of experience in up-to-date methodologies and in-depth treatment of selected, leading-edge research topics to significantly advance your career prospects within IT industry and to aid you in undertaking research in Computer Science.

In order to accommodate the different needs for further education, recognizing in particular the needs of people in employment, we provide flexible ways of pursuing the MS degree in Computer Science by offering different specializations.

Computer scientists have made tremendous contributions to change our way of life. Since virtually every sector of industry requires computer scientists, becoming one is an opportunity to shape the future of our world. Computer science offers a unique way of expressing yourself.

It has elements of design, engineering and mathematics, and sets in the context of programming and its applications. Successful computer scientists however have more than these specialist skills. Team work is crucial; very few professional computer projects take place in isolation. Essential skills also include understanding the requirements of users, creatively and carefully translating them into working modules and checking to see that programs work safely, reliably and as intended. Computer scientists should enjoy such challenges and have the patience, persistence and determination to see it through.

Our academically challenging courses are designed to help students acquire these skills. Students must take responsibility for their own learning: a vital skill in such a rapidly developing field. The course is fast-paced and reflects the high standard expected of professional computer scientists. Students begin by learning core areas such as computer Architecture, algorithms and operating systems before they take advance electives in different areas such as databases, networks, graphics, semantic web, AI etc to create a well-rounded program of study. By the end of the degree program, you will have covered the essential aspects of computer science in breadth and depth. Together with team project and possible work placements the course provides excellent preparation for professional computer scientists.

The academic demands of this degree program from its outset are reflected in the additional entry requirements which include Mathematics. Crucially we regard enthusiasm, hard work and commitment as essential to meet the intellectual demands of Computer Science as a subject of academic study in a vibrant research-oriented environment.

Area of Specialization / Research Opportunities

A conducive atmosphere for research exists at the Computer Science department which encourages MS (CS) students to participate and engage themselves with devotion and commitment to research. Senior faculty members provide requisite lead to their junior partners resulting in full fledged research activities wherein both faculty as well as the students eagerly participates. The quality of research is fairly standard one as can be judged from the following observations. The CS department of Lahore Campus has around faculty members. Their research activity in the department is very commendable. Faculty and students published their work in international and national conference as well.

One book chapter in Spaniard edition was produced and the publisher showed a lot of enthusiasm and invited the author to publish full book. Another book chapter was produced by another faculty member in a foreign edition of equal standing.

Following areas of research are available in the department.

Natural Language Processing

Natural Language Processing is an important branch of research which encompasses digital signal processing, automatic speech recognition (ASR), speech analysis and synthesis and many related offshoots like digital audio entertainments etc. Digital signal processing is used to provide analysis of time waveform. A number of young faculty members under the supervision of a senior faculty member are engaged in this area of research that have their expertise in algorithm analysis, code development and software engineering. The team has produced research papers for international and local conferences and a number of them are in the pipeline.

Computer Graphics

One major offshoot of this area of research is popularly known as Computer Aided Design (CAD) which routinely is used for design of automobiles, aircrafts, watercrafts, spacecrafts, textiles and buildings etc. Wire frame models of things which require designing are prepared to quickly see the effect of interactive adjustments.

Entertainments have benefited stupendously from computer graphics. Motion pictures, music video and television shows heavily draw their strength from computer graphic methods and this phenomenon is commonly visible in Hollywood films.

Visualization is a process of seeing a large amount of data in visual form to discover the patterns and trends of phenomena to which data is related. Commerce, industry and engineering fields normally deal with wide expanse of data and trends and patterns are not easily apparent if usually the large data files are examined. Visualization becomes inevitable for quick and efficacious grasp of trends. A senior member of the department is providing guidance to researchers who opt to go in this field.

Image Processing

Image processing and computer graphics go almost hand-in-hand and good deal of overlapping of methods used in the fields exists. While the computer graphics primarily is concerned with making or designing a picture image, processing on the other hand is used to modify or interpret a given picture. This field is popular in the department and a number of research associates, internees of software houses and faculty are working on it.

Databases

Use of distributed systems has become a common practice in today's computing environment especially with the easy access of the Internet. Distributed Databases (DDBs), however, are generally implemented in relatively large organizations and need better understanding of the database and networking concepts. The same two concepts provide the foundation of this course. The emphasis in the course of DDBs is on the design and management issues of a Distributed Database System and at the same time on the implementation issues. The course starts with the basic definitions of DDBs and related concepts. After that major architectures of the DDBs are discussed followed by design issues of a DDB. This part of DDB design concentrates on the fragmentation and its different types. In order to give a better and clearer understanding of the fragmentation, different examples using leading check DDBMS are presented. The second alternative for the implementation of DDBS is replication, which is discussed with examples. The issues related to DDBS administration, failure recovery, transaction management and concurrency control are discussed as well. Advanced topics such as Parallel Databases, Object Distributed Databases and Multidatabases are also presented.

Computer Networks

Mobile Adhoc Network (MANET)

Mobile Ad hoc Networks (MANET) have transpired as a key research area over the past 8 years. MANETs have no fixed infrastructure and each node in a MANET is mobile and acts as an independent router. These networks are very useful particularly in situations where geographical or terrestrial constraints demand a totally distributed network system without any base station. Few applications of MANET are battlefields, military applications, emergencies and disaster situations.

MANET is a prominent research area at Computer Science Department. During last three years, MS (CS) students and faculty members have addressed various research issues in MANETs such as Routing Protocols, Quality of Service (QoS), and Intrusion Detection, Node Mobility, Security and Density calculation.

Wireless Sensor Network (WSN)

Wireless Sensor Network (WSN) consists of tiny sensors to monitor physical or environmental conditions such as temperature, pressure, vibration, patient vital signs, and sound at different locations. WSNs have many applications such as disaster management, healthcare, traffic control, home automation, nuclear reactor control, fire detection, object tracking and agriculture. The sensor motes are equipped with radio transceiver, battery and microcontrollers. A WSN normally constitutes an adhoc network and therefore extends many research issues of MANETs. But WSN has many other open research issues such as limited battery life, heterogeneity of sensors, large scale deployment, communication failure, harsh environment and security.

WSN, due to its civilian and military applications is very popular research area at Computer Science Department. Currently, the focus of research is on Biomedical Wireless Sensor Network (BWSN) and Wireless Multimedia Sensor Networks (WMSN). BWSN emerged from the integration of biomedical sensors with wireless networks and have great potential applications in medical scenarios. Research is going on to develop novel schemes to provide intelligent priority assignment mechanisms to time critical medical emergency data. WMSN is a new research area and the focus of our research is to provide low latency to multimedia contents over WSNs and to optimize routing protocols dynamically.

Software Engineering

Software Engineering is an approach which helps to design and develop software that can perform flawlessly, according to user requirements. A dedicated research group at CIIT Lahore is working to develop new techniques and methods for engineering the quality software. Plenty of faculty members are working in the area of Reverse Engineering so that software development can be made flexible by generating the design of software from its implementation for the purpose of reusability. Also, CIIT Lahore has established another research group with the name Semantic Web and Service Engineering Research Group, under the umbrella of Software Engineering. We are offering this new specialization with name of Semantic Web and Service Engineering, so that our students and faculty members can share their knowledge in the upcoming world of Service Engineering.

The semantic Web and Service Engineering

The Semantic Web is not a separate Web but an extension to the current World Wide Web (WWW). The Semantic Web aims at finding the information on the basis of contents of Web resources rather than performing only the key word based searching. To make the Web documents equally understandable both for human and computers is the vision of the Semantic Web. Web Service is platform and language independent technology to develop business applications as business services. Combining the idea of the Semantic Web and Web Services will help in dynamic integration of business services as newly emerging technology known as Semantic Web Services. This specialization will briefly cover the topics in the area of the Semantic Web and Semantic Web Services.

Faculty

Computer science is an academic discipline that is distinct from other pure and applied sciences, engineering and mathematics. You will be taught by computer scientists who are at forefront of knowledge. This is reflected in the Department's high rating for research. Teaching is of a high standard achieving a rating of 'excellent'. You will find the atmosphere in the Department friendly and informal and help is readily available. Teaching is conducted by lectures, tutorials and laboratory/ practical exercises. Involvement in research by students is encouraged.

Department of Computer Science - Wah Campus

The Department of Computer Science was established in year 2001. It is offering BS degree in Computer Sciences BS(CS), BS Telecommunication & Networks BS(TN) and Master of Computer Sciences MCS. The main objective of the department is to produce Computer Scientists and Information Technology personnel in order to meet the growing demand for computer professionals in the country.

It has a progressive vision to meet the future academic goals of the country and at the same time produce scholars, who can carry out research and development in IT industry. It is a place where you and highly qualified, professional and dedicated faculty members including PhDs will develop and implement the ideas by getting the things out of you that you never knew you had. Immediately upon graduation from the department, students are well prepared to meet the challenges of the professional world.

The Department of Computer Science is increasing its strength by introducing new disciplines and programs. This year we are offering Master of Science in Computer Sciences MS(CS) with specialization including Computer Networks, Software Engineering, Database Systems. It will be a good opportunity for the students seeking higher education and standards in Pakistan.

Area of Specialization / Research Opportunities

The Department offers rich variety of research areas for its students. Some popular research areas that are being explored at the department include Computer Networks, Computer Graphics and Visualization, Software Engineering, Database Systems and many more.

Seminars

Seminars provide an activity for interaction among people of different schools of thought. The computer science department at Wah campus regularly organizes seminars by the faculty members and researchers in different areas. This activity has tremendously uplifted the research horizons of the faculty members at the department.

Faculty Members of Department of Computer Science

Islamabad Campus

Professor

- Dr. Maqbool Uddin Shaikh, PhD, Liverpool University, UK

Advisor

- Ikram ul Haq, MS, Wales University, UK

Associate Professors

- Dr. Romana Aziz, PhD, University of Manchester, Institute of Science & Technolog, UK (On Study Leave)
- Dr. Sajjad Mohsin, PhD , Muroran Institute of Technology, Japan

Assistant Professors

- Dr. Nasro Min-Allah, PhD, Graduate University of Chinese Academy of Sciences Beijing, China
- Dr. Shehla Abbas, PhD, University of Bordeaux 1, France
- Dr. Shahid Nazir Bhatti, PhD, Kepler University, Austria (On Study Leave)
- Dr. M. Manzoor Ilahi Tamimy, PhD, Graduate University of Chinese Academy of Sciences Beijing, China
- Dr. Abid Khan, PhD, Harbin Institute of Technology Harbin, China
- Dr. Muhammad Tahir, PhD, Ecole National Superieur Des Telecommunication Paris, France
- Dr. Zia uddin, PhD, Asian Institute of Technology Pathum Thani, Thailand
- Dr. Sadaf Tanvir , PhD, University of Grenoble, France
- Dr. Farrukh Munir, PhD, Institute Eurecom Sophia Antipolis, France
- Dr. Mansoor Ahmed Awan, PhD, Vienna University of Technology, Austria
- Dr. Muhammad Asim Noor, PhD, Johannes Kepler University Linz, Austria
- Dr. Malik Najmus Saqib, PhD, Vienna University of Technology Vienna, Austria (On Study Leave)
- Dr. Majid Iqbal Khan PhD, University of Vienna, Austria
- Mukhtar Azeem Qureshi, MSc, UET Taxila, Pakistan
- Zeeshan Mehta, MS, University of South Australia, Australia
- Rubina Adnan, MSc, Gomal University D.I.Khan, Pakistan
- Asad Abbass Malik, MS, Skoved University, Sweden
- Inayat-ur-Rehman, MCS, Barani Institutte of Information Technology University of Arid Agriculture Rawalpindi, Pakistan
- Syed Zulqarnain Jaffery, MSc Quaid-i-Azam University Islamabad, Pakistan Muhammad Mustafa Khattak, MSc, Quaid-i-Azam University Islamabad, Pakistan
- Rizwana Irfan, MSc
- Javed Iqbal , MS
- Ahmad Raza Shahid , MS, Michigan State University, USA (On Study Leave)
- Umar Nauman, MS, FAST-NU Islamabad, Pakistan
- Omer Vikas, MSc, UET Texila, Pakistan
- Qasim Arshad Choudhry, MSC , New Jersey Institute of Technology, USA

Besides, 45 Lecturers and 8 Research Associates are also associated with this department.

Abbottabad Campus

Assistant Professors

- Dr. Sajjad Ahmad Madani, PhD, Vienna University of Technology, Austria
- Dr. Imran Ali Khan, PhD, Graduate University of Chinese Academy of Sciences Beijing, China
- Dr. Muhammad Waqas Anwar, PhD, Harbin Institute of Technology Harbin, China
- Dr. Danish Irfan, PhD, PhD, Harbin Institute of Technology Harbin, China
- Dr. Khizar Hayat, PhD, Universite Montpellier II, France

- Muhammad Shakeel, MS, Korea Adcanced Institute of Science & Technology, Korea
- Muhammad Tariq, MSc, Gomal University D.I.Khan, Pakistan
- Irshad Ahmad MS, IMS Peshawar, Pakistan (On Study Leave)
- Allah Bux Sargano, MCS, University of Sindh, Jamshoro, Pakistan
- Syed Faisal Ali, MS, Iqra University Karachi, Pakistan
- Tanveer Ahmad, MS, COMSATS Institute of Information Technology Abbottabad, Pakistan
- Jawad Haider Kazmi MS, COMSATS Institute of Information Technology Abbottabad, Pakistan
- Kashif Bilal, MS, COMSATS Institute of Information Technology Abbottabad, Pakistan
- Saadat Iqbal, MSc, Quaid-i-Azam University Islamabad, Pakistan
- Muhammad Taimoor Khan, MS, University of Lancaster, UK (On Study Leave)
- Atif Nauman Jamil, MS, University of Canberra, Australia (EoL)
- Safdar Zaman, MS, International Islamic University Islamabad, Pakistan (On Study Leave)
- Eraj Khan, MS, Halmstad University, Sweden (On Study Leave)
- Naveed Ali Kaim Khan, MS, Institute National Des Telecom France, France
- Aftab Hussain, MS, University of Bedfordshire, UK
- Sardar Nouman Aslam, MS, COMSATS Institute of Information Technology Abbottabad, Pakistan
- Imtiaz Ahmad, MS, University of Bedfordshire, UK
- Mazhar Ali, MS, Kungliga Tekniska Hogskolan, Sweden
- Usman Aftab, MS, NUST, Pakistan (EoL)

Besides, 44 Lecturers and a Research Associate is also associated with this department

Lahore Campus

Professor

- Dr. Syed Asad Hussain, PhD, The Queen's University of Belfast, UK

Advisor

- Dr. Javaid Sikandar Mirza, PhD, Salford University, UK

Associate Professor

- Dr. Zulfiqar Habib, PhD, Kagoshima University, Japan

Assistant Professors

- Dr. Mudasser Naseer, PhD, Beijing University of Aeronautics & Astronautics, China
- Dr. Saqib Rasool Chaudhry, PhD, Brunel University, UK(On Study Leave)
- Dr. Tauseef Gulrez, Post Doctorate, Macquarie University Sydney, Australia, PhD, Macquarie University Sydney, Australia
- Dr. Syed Asim Ali, PhD, University of Paris, France
- Humera Niaz, MS, COMSATS Institute of Information Technology Islamabad, Pakistan
- Sobia Zaheer, MS, National University
- Rizwan Ahmad, MS, NUST, Pakistan (On Study Leave)
- Aman Ullah, MSc, University of Engineering & Technology Lahore, Pakistan
- Muhammad Ghulam Rasool, MSc, Bahauddin Zakariya University Multan, Pakistan (On Study Leave)
- Muhammad Sohaib Mahmood, MS, Stattgard University of Applied Sciences, Germany (On Study leave)
- Atif Saeed, BSc, UET Lahore, Pakistan
- Abdul Karim Shahid, MSc, University of Kele Keele, UK
- Muhammad Usman Akram, MS, University of Sussex, UK
- Rizwan Qureshi, MS, COMSATS Institute of Information Technology, Pakistan
- Nadeem Ghafoor Chaudhry, MS, University of Massachusetts, USA
- Muhammad Umair, MSc, Quaid-i-Azam University Islamabad, Pakistan (On Study Leave)

Besides, 33 Lecturers and 6 Research Associates are also associated with this department.

Wah Campus

Assistant Professor

- Dr. Ehsan Ullah Munir, PhD, Harbin Institute of Technology Harbin , China
- Dr. M. Wasif Nisar, PhD, Graduate University of Chinese Academy of Science Beijing, China
- Muhammad Sharif, MS, COMSATS Institute of Information Technology Islamabad, Pakistan
- Mussarat Abdullah, MS, Iqra University Islamabad, Pakistan
- Najam-ul-Ikram Qazi, MCS, Quaid-i-Azam University Islamabad, Pakistan
- Riaz Ahmed Bhatti, MS, CASE Islamabad, Pakistan
- Faisal Azam, MS, COMSATS Institute of Information Technology Islamabad, Pakistan
- Faisal Shafique Butt, MS, CASE Islamabad, Pakistan
- M. Tariq Zafar Chishty, MCS, Gomal University, D.I Khan, Pakistan
- Tariq Umer, MSc, Bahauddin Zakriya University Multan, Pakistan (On Study Leave)
- Sulma Rasheed, MS, Iqra University Islamabad, Pakistan (On Study Leave)
- Maaz Rehan, MS, MAJU Islamabad, Pakistan

Besides, 12 Lecturers and 2 Research Associates are also associated with this department.

Program: MS/PhD- Computer Science

Program	MS/PhD Computer Science
Eligibility	A minimum of 16 years degree with 1st division or CGPA 2.5/4.0 in any of the following fields: • Computer Science/Computer Engineering or equivalent Basic Sciences: Physics/ Mathematics/ Statistics For admission in PhD, MS with 70% marks or CGPA of 3.0/4.0 is required.
Campus Offering	Islamabad, Abbottabad, Wah & Lahore

Specialization:

- Database Systems
- Business Intelligence
- Artificial Intelligence
- Software Engineering
- Semantic Web and Service Engineering
- Computer Networks /Multi media Technologies
- Computer Graphics and Visualization.

However, the applicant seeking admission in this program must have a sound background in the following areas of Computer Science:

- Algorithms & Data Structures, Computer
- Organization and Assembly Languages
- Database Systems
- Operating Systems Concepts
- Computer Communications and Networks.

Career Potential/Career Prospects:

On successful completion of the course, graduates will have an excellent opportunity in finding employment in areas such as Information Technology (IT), computing in industry and

commerce, research in computer science or related disciplines, or teaching at various levels.

Health Informatics Unit, Islamabad Campus

Introduction

Health Informatics Unit in the Department of Computer Science offers courses of study ranging from an introductory overview to an intense, full curriculum in Health Informatics, with special emphasis placed on the fields of health information systems, management and health-enabling technologies. Courses of study are offered as part of an innovative curriculum, which involves collaborations with international universities and healthcare institutions. Health Informatics (HI) focuses on the application of computer information systems to health care and public health. It extends beyond simply using the computer as a tool for computation into the process of knowledge acquisition, storage, retrieval, representation and manipulation of data.

Our mission of the multidisciplinary Health Informatics Program is to “Integrate Health care system with I.T." A useful model of the emergence of informatics is to consider different roles of clinicians, management and IT services in health care. Health Informatics is the science of information management in healthcare and it blends clinical practice, decision-making and research. Health Informatics is a body of knowledge and a set of techniques to organize and manage information in support of research, education and patient care.

The degree requirements include a mandatory research project / thesis, with a goal of producing work that may be published in peer-reviewed journals. Possibilities for projects will include research in areas such as disease management, human-computer interaction and interfaces, electronic medical record, telemedicine, standardized medical terminology and messaging systems, security of health care systems, and the privacy of patient data.

Career Potential/Career Prospects:

After completing Masters in Health Informatics you will have the capability to apply for a wide variety of posts both in public and private hospitals, pharmaceutical industries, and multi-national Health Care Organizations, N.G.Os and Overseas organizations.

Why Health Informatics at CIIT?

The Health Informatics Master's Degree program at CIIT is designed in such a manner that deliver advanced training in informatics to health care professionals who want to redirect their careers to become health informatics researchers, as well as those who are interested in integrating health informatics expertise in their current professional roles. This program is likely to appeal to the so- called “early adopters” within the health care environment, health professionals involved in system implementation and individuals with an interest in conducting related research.

Objectives of the course:

To promote, advance and encourage the study and practice of the application of informatics in the promotion of health, well being and dying with dignity.

To establish, uphold and improve the standards of qualifications, training, competence and conduct of health informaticians in the Pakistan.

To produce heath informatics graduate who understand the application of information technology and advanced telecommunications technology.

To create an awareness of increasing role and potential of information technology and communications technology for effective and efficient health services, particularly for rural, remote, housebound patients.

Improve the understanding of the general nature and purpose of (health) information management systems including understand the need for information technology in medicine, dentistry, pharmacy and healthcare in general.

Develop ability to search the health and biomedical literature using international databases such as MEDLINE, OVID, CAB, EMBASE, COCHRANE, etc. and other full-text and bibliographic systems.

Develop ability to locate and manage all types of information for healthcare including:

1) Information for clinical purposes
2) Information for the management of health care
3) Information for the study of health trends of the community.

Improve skills, confidence in the use of health, Health informatics Applications. Improve the consulting skills and confidence required when using computers and networks in consultation.

Improve awareness of the various potential uses of information technology in different branches of medicine and the ways in which information technology may meet the needs of healthcare workers.

Develop appreciation to and understanding of the legal, ethical, human and social (including privacy and confidentiality) issues associated with the introduction and use of information and telecommunication technologies in the health care.

Understand the principles and applications of coding and classification systems used for recording of data and its quality control in computer-based systems in the health services.
Understand the principles and the risks involved in use of electronic communication of information and data interchange between computers over wide area networks.

Facilities

The Health Informatics Unit provides working desk to MS scholars along with a desktop computer. The good bandwidth connection of Internet is available 24 hours over LAN.

It becomes further productive when research scholars use HEC sponsored access to digital libraries. There are well equipped computer labs in the department.

Research Collaborations

Health Informatics Department, University of Otago, New Zealand. MS (HI) is research based and students' MS thesis will be supervised by senior professors of University of Otago and some other leading overseas universities, in addition to local faculty.

Research Opportunities

The MS students get research opportunities in the fields of Health Informatics, Electronic Health Record, Modeling to Develop a Clinical Practice, Networking, Data Mining, Health Early Warning System, IT skills for health professionals and dispensing of controlled medicines through software, computing for Physicians, Dental Surgeons and Pharmacists are available.

Research Publication

COMSATS Institute of Information Technology and University of Otago, New Zealand have jointly published a journal named "A Journal of Health Informatics in Developing Countries "
ISSN: 1178-4407. www.jhidc.org

The Health Informatics Department has established Inter Departmental Research Group

Its members are Centre for Advanced Studies in Telecommunication (CAST). Computer Science, Department (CS), Health Information and Management System (HIMS) Ministry of Health. Health Informatics Department (HI) encompasses health information systems used in health care delivery and management. The Group focuses on the use of health information technology to improve the quality and reduce the cost of health care.

Ministry of Health. Health Informatics Department (HI) encompasses health information systems used in health care delivery and management. The Group focuses on the use of health information technology to improve the quality and reduce the cost of health care.

Research Group members share an interest in health information technology issues such as using technology to support patient-centered care, develop disease management tools, enhance the coordination and continuity of care, identify beneficial uses of the Internet, and assist in the timely collection of data.

Academic International Links:

- The Health Informatics Department is institutional academic Member of the International Medical Informatics Association (IMIA) USA
- Global Health Work Force (GHWA) Geneva (Switzerland) a subsidiary of
- World Health Organization (W.H.O)
- The Commission on Accreditation for Health Informatics and Management Education (CAHIM) USA
- Global Allied for ICT and Development
- (GAID) approved by the United Nations
- Global Development Network (GDN)
- Health System Action Network (HSAN)
- Health Care Information for All 2015(HIFA)
- Geneva Foundation for Medical Education & Research (GFMER)
- The World Health Organization (WHO), Department of Human Resources for Health, Reproductive Health and Research, the Health Professionals Global Network (HPGN)
- Canada's Health Informatics Association (COAH)
- International Network for the availability of Scientific Publications (INASP)

Faculty Members

Advisor

- Dr. Shafaat A. Khan, MA, New York Medical College, USA

Besides, 3 Lecturers are also associated with this department.

Program Details

Program: MS- Health Informatics

Program	MS in Health Informatics
Eligibility	MB.B.S with one year house job and registered with P.M.D.C or B.D.S with one year house job and registered with P.M.D.C or Pharm-D B. Pharmacy with one year intern/job in Hospital or Pharmaceutical Industry and registered with P.C.P.
Campus Offering	Islamabad

The applicant seeking admission in MS(HI) must have a sound background in undergraduate courses like "ICT for Health Informatics" and "Health Application Development". In case a student does not have required proficiency in pre-requisite back ground he/she may be advised by the department to take these as non-credit courses.

Why to choose Health Informatics at CIIT?

The Health Informatics Master's Degree program is designed to deliver advanced training in informatics to health care professionals who want to redirect their careers to become health informatics researchers, as well as those who are interested in integrating health informatics expertise in their current professional roles.

This program is likely to appeal to the so-called "early adopters" within the health care environment, health professionals involved in system implementation and individuals with an interest in conducting related research.

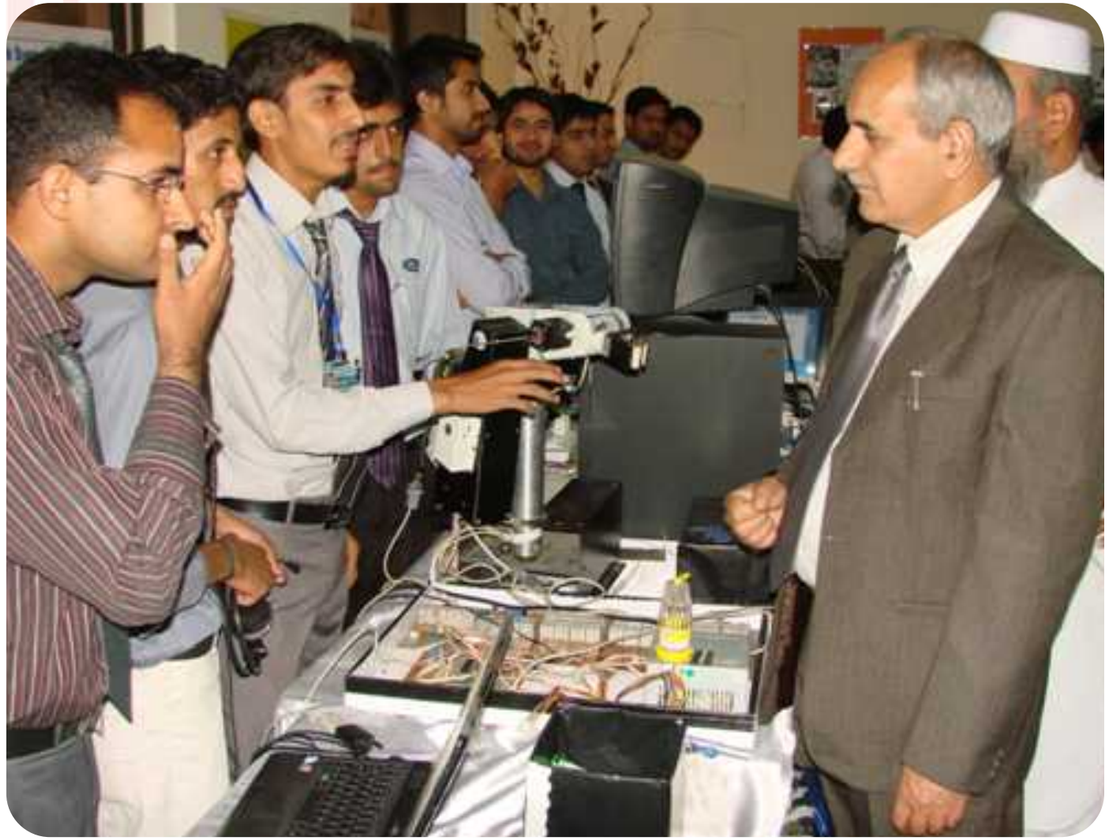
Study Pattern

This program requires satisfactory completion of courses of the program and the structure suggested by the department. This includes routine classroom coaching of core and elective courses demonstrated and explained with help of case studies, examples and real life scenarios.

Health Informatics Unit in the Department of Computer Science offers courses of study ranging from an introductory overview to an intense, full curriculum in Health Informatics, with special emphasis placed on the fields of health information systems, management and health-enabling technologies. Courses of study are offered as part of an innovative curriculum, which involves collaborations with international universities and healthcare institutions. Health Informatics (HI) focuses on the application of computer information systems to health care and public health. It extends beyond simply using the computer as a tool for computation into the process of knowledge acquisition, storage, retrieval, representation and manipulation of data.

Career Potential/Career Prospects:

After completing Masters in Health Informatics you will have the capability to apply for a wide variety of posts both in public and private hospitals, pharmaceutical industries and multi-national Health Care Organizations, N.G.Os and Overseas organizations.



"Parallel and Distributed Computing Research Lab established in COMSATS Institute of Information Technology, Abbottabad, is dedicated group of professionals having a vision and desire to explore and enhance the state of the art technologies in the area of Parallel and Distributed computing. The group comprises of the dedicated goal oriented research personnel. The Group has initiated different research projects in the area of Parallel & Distributed Computing and has already achieved some milestones in this area of research.

In the above reflected picture, Director CIIT Abbotabad Campus is taking stock of the Research work being done by the students of Department of Computer Science at Parallel and Distributed Computing Research Lab."

Faculty of Sciences

Welcome message by Dean Faculty of Sciences:

The courses for these disciplines have been designed with the express aim to impart a clear insight into basic sciences and to develop strong experimental and technological skills. These programs provide a firm foundation for employment in industry and R & D organizations, as well opportunities to pursue academic and research oriented careers. The faculty of Science at CIIT consists of the departments of Mathematics, Biosciences, chemistry, Physics, Meteorology, and Environmental Science.

This is the strongest faculty in terms of the programs offered, the faculty strength and the research produced. Every year the faculty of science tops in terms of research produced at the CIIT. The faculty is of international repute which is providing research facilities in diversified field and a dynamic and vibrant environment to undergo a transformation in research and development. The faculty of science is providing different programs, advanced infrastructure, and experience and dedicated faculty. The strength of graduate students is increasing tremendously as a feedback of excellent research facilities available at CIIT. If you really want to excel in basic sciences CIIT will provide you the best facilities, environment and research culture comparable with the top universities of the world.

Dean, Faculty of Sciences
Prof. Dr. Arshad Saleem Bhatti (PhD)

The graduate programs MS and PhD are offered in the following departments of various campuses of CIIT:

Islamabad Campus

Department of Biosciences
Department of Mathematics
Department of Physics
- Centre for Quantum Physics (CQP)

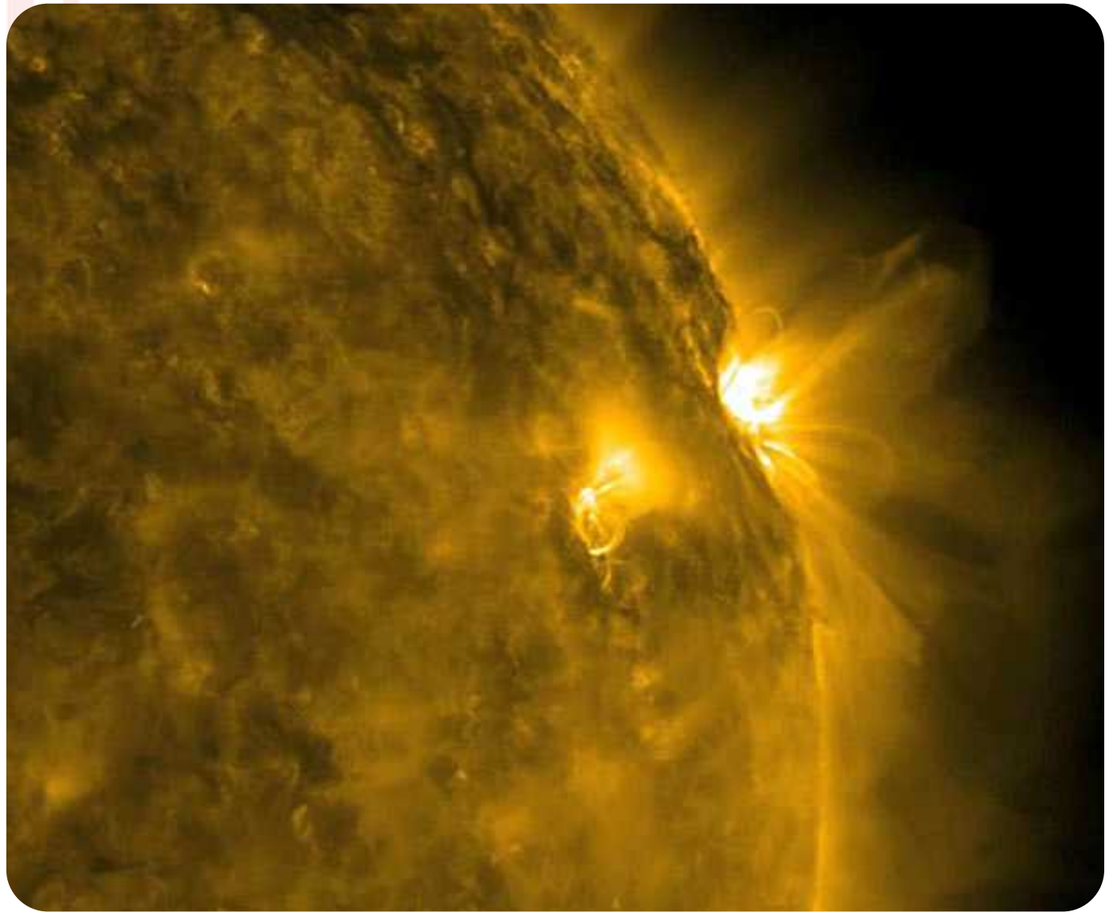
Department of Meteorology

Abbottabad Campus

Department of Chemistry
Department of Environmental Sciences
Department of Mathematics
Department of Pharmacy

Lahore Campus

Department of Mathematics
Department of Physics



The surface of the sun erupts with solar flares reaching tens of thousands of kilometres into space. The image was taken from Nasa's Solar Dynamics Observatory. This image has been taken using an extreme ultraviolet camera which only captures from the UV spectrum. The camera uses more pixels and colours than any other observatory in the history of solar physics.

Department of Biosciences (Islamabad Campus)

Facilities in the Department

In its short history of 7 years, the Department of Biosciences has made rapid progress in establishing well equipped-laboratories. There are many well-equipped specialized laboratories, including those of Biochemistry/Molecular Biology, Molecular Genetics, Cancer Genetics Microbiology, Immunology, Tissue culture and Sequencing in the Department. Currently available research equipment includes DNA sequencer, HPLC unit, Real-time PCR, Thermal Cyclers, Fluorescence Microscope, Refrigerated and non-refrigerated centrifuges, Freezers (-350C and -860C), gel electrophoresis units, ELISA reader, UV/Vis spectrophotometer, Fluorescence spectrometer, ice machine, incubators, deionizer, gel documentation systems, autoclaves, biological safety cabinets, water-jacketed CO_2, incubators, homogenizer, sonicator, fractionators and other instruments of routine use.

Computer Laboratory

In addition to the wet labs there are two well-equipped computer laboratories to carry out hands on exercises in Bioinformatics, with high speed Internet access.

Departmental Library

Complementing the institutional library that provides books and electronic resources in diverse fields of knowledge, the Department of Biosciences has its own library containing a comprehensive collection of books on Bioinformatics and other areas of biosciences.

Career Potential/ Career Prospects

The graduates can pursue their career in various domains of public and private sectors such as health, agriculture, energy, biotechnology, information Technology and education.

The Role of Our Graduates in Society

The insights, products and a variety of biomedical and biotechnological applications emerging from the field of genomics are widely considered as transformation engines for medicine and biology in the coming years. An equitable contribution of developing countries, such as Pakistan, in this whole process, is not only vital for the economic growth of the country but also of global importance to best reap the profits of human resource world-wide. We believe that our graduates with broad based knowledge will fill this vacuum.

Faculty Members of the Department of Biosciences

Islamabad campus

Professors

- Dr. Farah Mustafa, PhD, University of Massachusetts Medical Centre, USA
- Dr. Shahid Nadeem Chohan, PhD, Plant Molecular Biology UMIST Manchester, UK
- Dr. Fauzia Yousaf Hafeez, PhD, Quaid-i-Azam University Islamabad, Pak
- Dr. Raheel Qamar, PhD, University of North Texas, USA

Advisor

- Dr. Shahzad. A. Mufti, PhD , Case-Western Reserve University, USA

Associate Professors

- Dr. Syed Habib Bokhari, Post Doctoral, University of London, UK, PhD, University of Glasgow, UK
- Dr. Asifa Ahmed , PhD University of Karachi, Pak
- Dr. Rani Faryal, Post Doctorate, Karolinska University, Sweden, PhD, Quaid-i-Azam University Islamabad, Pak
- Dr. Mahmood A. Kayani, PhD, University of Wales, Swansea, UK

Assistant Professors

- Dr. Tayyaba Yasmin, PhD, PMAS Agriculture University Rawalpindi, Pak
- Dr. Muhammad Zeeshan Hyder, PhD, University of Arid Agriculture, Pak
- Dr. Ramla Shahid, PhD, Cambridge University UK
- Dr. Muhammad Saeed, PhD, Innsbruck Medical University, Innsburk, Austria
- Dr. Nazish Bostan, PhD
- Dr. Zakira Naureen, PhD, University of Lancaster, UK
- Irum Muhammad Qureshi, MPhil Quaid-i-Azam University Islamabad, Pak

Besides, 24 Lecturers and 39 Research Associates are also associated with this department.

Program: MS/PhD Biosciences

Program	MS/PhD Biosciemces
Eligibility	Applicants seeking admission in MS Program in Biosciences must have completed 16 years of education with 1st division or CGPA of 2.5/4.0 in relevant life sciences disciplines are eligible for admission to the MS program. For admission in PhD, MS with 70% Marks or CGPA of 3.0 is required.
Campus Offering	Islamabad

Specialization:

Biochemistry/Molecular Biology
Molecular Genetics
Microbiology/ Immunology
Molecular Virology
Developmental Biology

Why to choose Biosciences at CIIT?

The insights, products and a variety of biomedical and biotechnological applications emerging from the field of genomics are widely considered as transformation engines for medicine and biology in the coming years. An equitable contribution of developing countries, such as Pakistan, in this whole process, is not only vital for the economic growth of the country but also of global importance to best reap the profits of human resource world-wide. We believe that our graduates with broad based knowledge will fill this vacuum.

Career Potential/Career Prospects

A degree in Biosciences will prepare students for suitable careers in the field of teaching, clinical and research institutes, pharmaceutical companies, biotechnology industries, etc.

Program: MS- Bioinformatics

Program	MS/PhD Biosciences
Eligibility	Applicants seeking admission in MS Program in Biosciences must have completed 16 years of education with 1st division or CGPA of 2.5/4.0 in relevant life sciences disciplines are eligible for admission to the MS program. For admission in PhD, MS with 70% marks or CGPA 3.0 is required.
Campus Offering	Islamabad

Why to choose Bioinformatics at CIIT?

Over the past two decades, explosive epidemics of unidentified and re-emerging diseases have given the world a few close calls. Some have affected international trade and tourism; others have led to the mass slaughter of poultry and farm animals. These epidemics have resulted in overwhelming the health services and diversion of essential resources from elsewhere. Almost all these diseases have caused fear and panic.

The availability of complete genome sequences for several human pathogens coupled with bioinformatics will lead to significant advances in understanding completely the biological processes underlying the normal physiology of both hosts and pathogens. The medical developments arising from genome projects are required to be exploited to monitor the disease susceptibility and spectrum of disease in our indigenous populations, which we hypothesize, would be different from rest of the world and also within the country.

Career Potential/Career Prospects

The insights, products and a variety of biomedical and biotechnological applications emerging from the field of genomics are widely considered as transformation engines for medicine and biology in the coming years. An equitable contribution of developing countries, such as Pakistan, in this whole process, is not only vital for the economic growth of the country but also of global importance to best reap the profits of human resource world-wide. We believe that our graduates with broad based knowledge will fill this vacuum.

A career in Bioinformatics will prepare the students for suitable careers in the field of teaching, clinical and research institutes, pharmaceutical companies, software warehouses, biotechnology industries, computer sciences field, etc.

Department of Chemistry

Chemistry is the core of all Sciences. There is no aspect of human society that is not benefiting from the contributions of basic and applied chemistry. Its application has resulted in countless new products that are considered essential for our socio-economic uplift.

Vision Chemistry is to develop a strong baseline of science and technology such that COMSATS will not only be at top ranking only as contributor in quality education and research but also as the national and international collaborator in science and technological advancement.

The synergy of collaboration often has a multiple effect on the nation's pool of talent, equipment and capital available for R&D, and that Chemistry in technological growth and competitive advantage “depends upon individual and collaborative efforts of industry, government and academia to improve the nation's R&D enterprise.

The mission is to develop high quality man power for the exploitation of natural resources (Medicinal plants and Minerals), conservation of habitat and provision of need-based scientific feed back to the industries.

Career Potential/Career Prospects

Chemistry has such a wide variety of important applications that it creates constant demand for well-trained chemists in many fields. There is large number of job opportunities for Chemistry graduates nationally and internationally e.g., in Industries, Research institutes (NIBGE, PCSIR, Atomic Energy, Kahoota Research Labs, etc)Health departments, Mineralogy department, Ministry of Environment, Pharmacy, Agriculture and Teaching Institutes, etc. In order to fulfill these enormous demands of Chemists, the department of Chemistry at, CIIT Abbottabad, is offering MS/PhD program of studies.

Subject Areas

Chemistry has such a wide variety of important applications that it creates constant demand for well-trained chemists in many fields. There is large number of job opportunities for Chemistry graduates nationally and internationally e.g., in Industries, 3.Research institutes (NIBGE, PCSIR, Atomic Energy, Kahoota Research Labs, etc)Health departments, Mineralogy department, Ministry of Environment, Pharmacy, Agriculture and Teaching Institutes, etc. In order to fulfill these enormous demands of Chemists, the department of Chemistry, COMSATS Abbottabad, is offering MS/PhD specialization in the following fields:

- Industrial Chemistry
- Applied Organic Chemistry
- Physical Chemistry
- Inorganic Chemistry
- Analytical Chemistry
- Biochemistry

Department of Chemistry-Abbottabad Campus

Chemistry is one of the most vibrant and fundamental discipline underpinning multiple areas of science and technology, having major impact on the world present. There is a bright future in chemistry for the young generation; one has to just glance at the modern trends and advancements in chemistry.

From environmental control to information technology, chemists have played a key role in shaping the modern world. They played a significant role in the eradication of deadly diseases by developing life-saving pharmaceuticals .There is industrial revolution on account of new materials produced by chemists, for example, plastics, liquid crystal displays for computers, and the etching process that made microchip technology possible. The list is endless and much more is expected in future such as molecular opto-electronics, new magnetic and superconducting materials, molecular medicine, fuel cells, hydrogen storage cells most of them are the subjects of active research in this discipline. In short, it would be fair to state that Chemistry is one of the most significant scientific disciplines that boosts economic growth and reinforces the national development.

The increasing demand of qualified academicians and researchers for colleges, universities, research institutions and industries at national and specially at regional levels became one of the burning issues and the critical economical scenario urged to limit the indigenous and foreign scholarships. There for intellectual and enthusiastic students of this region in particular have to strive for quality education and innovative research .Most of them could not afford to seek admission in the quality providing institutions of Karachi, Lahore and Peshawar etc. Hence graduate program in chemistry was thought to be launched at Abbottabad campus from Fall 2009.

This area is a rich source of medicinal plants and rocks containing minerals which are yet to be explored efficiently and there are number of industries in this region. There is a dire need of professional chemists who can evaluate new compounds and materials, devise new and cleaner industrial methods for synthesis and manufacture, involve in biochemical analysis, forensic science, quality control and environmental protection. None of this is possible without a strong University education in Chemistry.

International Research Collaborations

- East China University of Science and Technology, Shanghai, China
- Brunel University, Oxbridge, London, UK.
- Vienna University of Technology, Vienna, Austria

National Research Collaboration

- International Center for Chemical and Biological Sciences, Karachi University, Karachi.
- Quaid-e-Azam University, Islamabad
- Institute of Chemistry, University of the Punjab, Lahore

Lab Facilities

The Department of Chemistry, with its highly qualified faculty, is an ideal platform for the students to carry their research. Our Laboratories are equipped with the most modern and automated technology. At present a wide range of instruments like Atomic Absorption Spectroscopy, Gas Chromatograph-FID, Gas Chromatograph-Mass Spectrometer, High Performance Liquid Chromatograph, Potentiometers, UV-Vis & IR Spectrophotometers, PCR, etc., are available to conduct teaching and research experiments.

Research Groups

- ***Research Group I***

Photochemical studies of Medicinal Plants
Natural Product Chemistry

- ***Research Interests***

Photochemical and biological studies of the plants form NWFP .Drug Discovery Guided Natural Product Chemistry, synthesis of designed medicinal compounds, Medicinal chemistry including rational and computational designing, synthesis and biochemical evaluation of new drug molecules.

- ***Research Group II***

Material Chemistry
Synthesis of Biologically active nano-materials,
Applied Liquid Crystalline materials, Organ metallic and Polymers

- ***Research Interests***

Synthetic Organic Chemistry includes the synthesis of biologically active like anticancer, anti leishmanial, anti rheumatic or industrially important molecules, development of new synthetic procedures and catalysis. Synthesis of composite materials, Synthesis of biologically significant nano materials, liquid crystals, polymers, and organ metallic compounds.

- ***Research Group III***

Industrial Chemistry, Waste water treatment, industrial effluent and re cyclic process.

- ***Research Interests***

Water Sanitation Health & Development, Water and Wastewater Treatment (Chemical and Biological), Biological nutrient removal (BNR), Modifying industrial processes, Media development for arsenic removal from potable water.

Abbottabad Campus

Professors

- Dr. Rehana Rashid, Chairperson, Post Doctorate, Max Planck Institute Muelheim, Germany, PhD, Martin Luther University Halle/s Wittenberg, Germany
- Dr. Abdur Rahman Khan, Post Doctorate, Kyungpook National University, South Korea, PhD, University of Birmingham, UK

Associate Professor

- Dr. Zakir Hussain, PhD, Institute fur Organische Chemie, TU Braunschweig, Germany (EoL)

Assistant Professors

- Dr. Khurshid Ayub, PhD, University of Victoria, Canada
- Dr. Amir Wasim, PhD, University of Baluchistan, Pakistan
- Dr. Syed Tauqir Ali Sherazi, PhD, Government College University Lahore, Pakistan (On Study Leave)
- Dr. Afsar Khan, PhD, H.E.J Research Institute of Chemistry Karachi, Pakistan
- Dr. Ather Farooq Khan, PhD, Vienna University of Technology, Austria
- Dr. Abida Kalsoom Khan, PhD, Quaid-i-Azam University Islamabad, Pakistan
- Dr. Umar Farooq, Post Doctorate, Cardiff university, UK, Post Doctorate, Universitate Pderborn, PhD, HEJ Research Institute of Chemistry Karachi, Pakistan
- Dr. Amara Mumtaz, PhD, Quaid-i-Azam University Islamabad, Pakistan
- Dr. Muhammad Hanif, PhD, University of Punjab Lahore, Pakistan

Besides, 2 Lecturers and 2 Research Associates are also associated with this department.

Program: MS/PhD Chemistry

Program	MS/PhD Chemistry
Eligibility	Applicants having 16 years of formal education in any discipline of chemistry, in Fist division or CGPA of 2.5/4.0, are eligible for admission in MS program. For admission into doctoral program an MS/MPhil or equivalent degree in the relevant field from an accredited educational institution with CGPA 3.0/4.0 and having no third division or D grade throughout the academic career. For admission in PhD, MS with 70% marks or CGPA of 3.0/4.0 is required.
Campus Offering	Abbottabad

Specialization:

Industrial Chemistry
Applied Organic Chemistry
Physical Chemistry
Inorganic Chemistry
Analytical Chemistry
Biochemistry

Why Chemistry at CIIT?

A degree in Chemistry will prepare students with suitable qualifications for jobs in the relevant department; for teaching as well as for research studies leading to PhD and an exciting research career in these fields.

Career Potential/Career Prospects

Chemistry has such a wide variety of important applications that it creates constant demand for well-trained chemists in many fields. There is large number of job opportunities for Chemistry graduates nationally and internationally e.g., in Industries, Research institutes (NIBGE, PCSIR, Atomic Energy, Kahoota Research Labs, etc) Health departments, Mineralogy department, Ministry of Environment, Pharmacy, Agriculture and Teaching Institutes, etc, In order to fulfill these enormous demands of Chemists.

Department of Environmental Sciences

Introduction

The Department of Environmental Sciences was established at CIIT with the principal mission to continue applied and fundamental research in environmental science. The department is aimed to provide both students and faculty with an opportunity to pursue their ambitions in this broad and multidisciplinary field and to become efficient advocates of environment.

Campus Offering Program

Abbottabad

- MS and PhD in Biotechnology
- MS and PhD in Environmental Science
- MS in Sustainable Water Sanitation Health and Development

Department of Environmental Sciences -Abbottabad Campus

The Department of Environmental Sciences was established at CIIT, Abbottabad in 2004 with the principal mission to continue applied and fundamental research in environmental science. The department is aimed to provide both students and faculty with an opportunity to pursue their ambitions in this broad and multidisciplinary field and to become efficient advocates of environment. The broad spectrum of the department provides its graduate students a great flexibility in choosing the program of their interest. The Department is composed of highly competent faculty and research staff with diverse backgrounds in a variety of disciplines including environmental studies, water resource management, waste management, alternate energy, biotechnology, environmental policy and law.

In addition, the department is establishing linkages with international institutions to develop split degree and research collaborative programmes. The department is also devising tailored courses according to the needs of related organizations, industries or institutions in Pakistan.

Students at the department represent a multi cultural and intellectual community, placing a premium on critical thinking and analysis. The research students are addressing a wide spectrum of issues from waste management to climate change, energy transformation, sustainable development and biotechnology.

Our graduate programmes aim to equip researchers belonging to a variety of backgrounds with the latest knowledge and to establish a research base with following long term objectives:

- ✓ Developing internationally recognized capabilities in the areas of specific need within Pakistan.
- ✓ Promoting the integration of environment, sustainability and resources development in education.
- ✓ Preparing and delivering tailored courses for industrial, public and private sectors.
- ✓ Establishing centers for specialized research and

training in energy and environment, biotechnology and consultancy services.

R&D Groups

The department has more than 35 faculty members and associates coming from disciplines like - Environmental Science and Engineering, Microbiology, Chemistry, Biotechnology, Earth Sciences and Development Studies. It reflects the necessary interdisciplinary team approach to problem solving in today's world. This interdisciplinary nature of environmental team leads to a diversity of interests, through seven broad themes:

- Renewable Energy and Environmental Technology
- Sustainable Agriculture and Food Security
- Disaster Management
- Water Sanitation and Health
- Earth Sciences and Natural Resource Management
- Policies, Governance and Conflict Resolution
- Geo-spatial Technology

Based on these themes seven Research and Development Groups are established. Each group led by highly skilled senior faculty member consists of five to seven members assisted by research associates and students. These groups are further supported by community services units/centers:

- Centre for Community Development (CCD)
- Environmental Management Unit (EMU)
- Life Sciences Centre (Liscent)

Research is undertaken on other issues when and where expertise is sought but the department is mainly focused on the above seven areas where the groups have critical mass of talent, demonstrate significant expertise, and concentrate the programme development efforts.

R & D Facilities

The Department has established four international standard laboratories and related facilities: -

- Central Analytical Research Lab
- Biotechnology Lab
- Microbiology Lab
- Applied Chemistry Lab
- Plant Herbarium & Research Farm

All these labs are provided with best sophisticated equipments and instruments. Central Analytical Lab deals with analyses of heavy metals in food, water, soil and plants by Atomic Absorption Spectrophotometer, analysis of aromatic and volatile compounds from food, water, soil and plants by Gas Chromatography. Apart from pesticide detection the facilities in the lab are enough to analyze pharmacological compounds from medicinal plants by HPLC. Laboratory of Applied Chemistry is involved in the analysis, treatment and recycling of the effluents of textile, tannery and chemical industry. Biotechnology lab is mandated with DNA fingerprinting, gene mapping, genomic analysis and tissue culture. Currently, gene mapping and tagging through DNA fingerprinting of economically important plant species is in progress. Laboratory of Microbiology handles biological and microbiological testing of drinking water, study on the microbiology of waste water, urine R/E and culture blood-urine. In addition to analytical labs a Plant Research Farm provides favorable environment to conduct graduate level research in phytoremediation, pharmacology, agriculture, ecology, biotechnology, plant genetics and plant pathology. At present a number of medicinal plant species, ornamentals, vegetables, fruit trees, forest species and cereal crop species are grown in the farm.

Moreover, the department aims at providing technical support, policy advice and community services in environment, health, and agriculture and water sanitation. Long term goal of the department is to provide innovative, practical and culturally acceptable solutions to the inherent and upcoming environmental problems of Pakistan.

R&D Projects

- Municipal Solid Waste Bagh (AJK)Project… (Funded by European Commission)
- Mapping of Ph-I Wheat Gene (Funded by HEC)
- Heavy Metal Recovery from Industrial Wastewater...(Funded by COMSATS)
- Environmental influences on maiz…(Funded by COMSATS)
- Molecular detection of potato diseases (Funded by COMSATS)
- NORAD MS Programme (NOMA, Norwegian Funded
- Treatment of Industrial Wastewater …. (in collaboration with Shezan International, Hattar)
- Molecular and morphological characterization of T1 and T2-generations
- Cloning and Expression of human enzymes (HEC Funded).

Conferences-Environmentally Sustainable Development "ESDev"

In pursuit of its objectives, the Department of Environment Sciences successfully organized "First International Conference on Environmentally Sustainable Development" ESDev-2005, in June 2005. Over 350 delegates including 50 international participants from 23 countries attended the conference. Among the recommendations was to continue the ESDev series of conferences every two years.

The 2nd International Conference, ESDev-2007 was held in August, 2007. Over 300 local and 40 foreign participants from different Universities, Higher Education Institutions and Organizations attended the conference. Third conference was held in August 2009.

Abbottabad Campus

Advisors

- Dr. Abdul Matin Awan, PhD, University of Punjab Lahore, Pakistan (On EOL)
- Dr. Kiramat Khan, PhD, University of Nebraska Lincoln, USA

Professors

- Dr. Muhammad Maroof Shah, PhD, Institute of Agriculture and Natural Resources University of Nebraska-Lincoln, USA
- Dr. Ishtiaq Ahmad Khan Jadoon, Post Doctorate, Germany, PhD, Oregon State University, USA
- Dr. Iftikhar Ahmad Raja, PhD, University of Strathclyde Glasgow UK

Associate Professors

- Dr. Arshid Pervaiz, PhD, University of Bradford, UK
- Dr. Muhammad Irshad, PhD, Tottori University, Japan

Assistant Professors

- Dr. Zahid Mehmood Khan, PhD, University of British Columbia Vancouver, Canada (EoL)
- Dr. Muhammad Tariq, PhD, State Technical University of Oil & Gas, Ukraine
- Dr. Farid Ullah, PhD, Tottori University Japan, Japan
- Dr. Muhammad Farooq Khan, PhD, Chonbuk National University Jeonju, Soth Korea
- Dr. Muhammad Umar, PhD, University of Baluchistan, Pakistan
- Dr. Qaisar Mehmood, PhD, Zhejiang University, Hangzhon, China
- Dr. Yusra Pervaiz Ashraf, MBBS, University of Punjab Lahore, Pakistan (On EOL)

- Dr. Jamshaid Hussain PhD, University of Verona, Italy
- Dr. Romana Khan, PhD, Kyungpook National University, Korea
- Dr. Raza Ahmad, PhD KAIST, Korea (On Study Leave)
- Dr. Muhammad Amjad Sabir PhD, University of Peshawar, Pakistan
- Dr. Amjad Hassan, PhD, Graduate School of Science & Technology, Niigata University, Japan
- Dr. Mustafa Nawaz Shafqat, PhD, Kansas State University, USA
- Dr. Tayyab Ashfaq, KAIST, Korea
- Dr. Muhammad Tahir Amin, PhD, Seoul National University Korea
- Dr. Muhammad Bilal PhD(Doctor of Philosophy)-European University of Brittany, France
- Azra Riffat Rana, MSc, University of Punjab Lahore (On Leave)
- Asim Jahangir Khan Wazir, MSc, University of Peshawar, Pakistan
- Muhammad Arfan, M.Phil, Quaid-i-Azam University Islamabad, Pakistan
- Zulfiqar Ahmad Bhatti, MSc, Katholieke University, Leuven, Belgium

Besides, 16 Lecturers and 15 Research Associates are also associated with this department.

Department of Environmental Sciences

Program: MS and PhD Environmental Sciences

Program	MS and PhD Environmental Sciences
Eligibility	Applicants seeking admission in MS Program in Environmental Science must have minimum 16 years of schooling i.e. Bachelors (4 years after FSc. in environmental sciences, engineering, agriculture, forestry, medical, development studies, or MSc in Natural sciences, biological and chemical sciences, and other related fields. For admission in PhD, MS with 70% marks or CGPA of 3.0/4.0 is required.
Campus Offering	Abbottabad

Why to Choose Environmental Sciences at CIIT?

A postgraduate qualification in Environmental Sciences will offer the flexibility of a range of subjects to choose from and also a wide range of career options.

MS degree in Environmental Sciences is equally open to graduates of earth and environmental sciences as well as single subject degrees in biology, chemistry, physics, mathematics, computing, and economics and engineering to embark upon successful training in Environmental Sciences.

Career Potential/Career Prospects

The objectives of the program are to enable the students to contribute successfully to professional, technical and managerial competencies currently required by business, industry and the Government.

Department of Environmental Sciences

Program: MS and PhD Biotechnology

Program	MS and PhD Biotechnology
Eligibility	Applicants seeking admission in MS Program in Environmental Science must have minimum 16 years of schooling i.e. Bachelors (4 years after FSc) in Biotechnology, Plant Breeding and Genetics, Agriculture, Environmental Sciences, Biosciences, Microbiology, DVM, Forestry, Medical sciences or MSc in biological and chemical sciences (Genetics / Chemistry / Botany/ Zoology or Forestry), and other related fields.For admission in PhD, MS with 70% marks or CGPA of 3.0/4.0 is required.
Campus Offering	Abbottabad

Why to Choose Biotechnology at CIIT?

Biotechnology is emerging as a powerful and valuable source of economic strength and sustainable productivity in developed and developing countries. It offers great opportunities for students for higher studies and research in biosciences to manipulate microbial and genetic material to produce a marketable and consumable product for the world economy. Pakistan lags far behind in the arena of biotechnology to exploit all likely potentials of productivity and growth. Realizing biotechnology as a means of dealing with malnutrition, parasitic diseases and crop out put, the department in collaboration with the Department of Biosciences, CIIT Islamabad is going to launch a fascinating graduate programme in Biotechnology.

Career Potential/Career Prospects

The objectives of the program are to enable the students to contribute successfully to professional, technical and managerial competencies currently required by business, industry and the Government.

Department of Environmental Sciences

Program: MS- Sustainable Water, Sanitation Health and Development

Program	MS in Sustainable Water Sanitation Health and Development
Eligibility	Applicants seeking admission in MS Program in Sustainable Water, Sanitation Health and Development must have minimum 16 years of schooling i.e. Bachelors (4 years after FSc) in engineering, , agriculture, forestry, medical , environmental sciences and development studies, or MSc in Natural sciences, biological and chemical sciences, development studies, and other related fields.
Campus Offering	Abbottabad

Why to Choose Sustainable Water, Sanitation Health and Development program at CIIT?

The objectives of the program are to enable the students to contribute successfully to professional, technical and managerial competencies currently required by business, industry and the Government.

The curricula of the programme are developed in response to the increasing demand of the market with appropriate blend of foreign skill and creativity and local culture.

Career Potential/Career Prospects

The students will acquire skills to plan, design, implement, manage and communicate appropriate technical solutions suitable to both urban and rural contexts and hence act as proactive team players committed to achieving the Millennium Goals with respect to water and sanitation.

Department of Mathematics at CIIT

Introduction

This has been rightly said and acknowledged by all that "Mathematics is Queen of all Sciences". The phrase has been well understood and appreciated with the passage of time. This beautiful subject has got recognition in all aspects of human life like basic sciences, engineering, technology, information technology, bio-sciences, environmental sciences, social sciences etc. The power of mathematics is felt like never before.

Department of Mathematics (Islamabad Campus)

The Department of Mathematics, CIIT Islamabad has been a part of the department of Mathematical Sciences at CIIT since 1998. However, the department started functioning independently from September 2002, when it offered a four-year BS (Math) program in Fall 2002. MS leading to PhD program in Mathematics was started in Fall 2004. The department is offering opportunities and specializations in Pure Mathematics, Applied Mathematics, Numerical Mathematics, Optimization and related disciplines.

The Department aims to pursue excellence in Mathematics through teaching and research by developing appropriate curricula and teaching practices, acquiring talented faculty members, and providing an environment conducive to teaching, research and learning. The students are encouraged to develop new ideas in research and to apply them in real world problems.

Research Areas

- ✓ Fluid Mechanics
- ✓ Computational Mathematics
- ✓ Computational Fluid Mechanics
- ✓ Computational Analysis
- ✓ Heat and Mass Transfer
- ✓ Topology
- ✓ Elastodynamics
- ✓ Modeling and Simulation

Research Collaborations

An impressive research collaboration of the faculty exists with the international community from leading universities of the world. This collaboration will be further strengthened at both personal and institutional levels. Adjunct faculty is also contributing in the development of the subject. Foreign faculty is playing an important role in some research areas of high interest and value. There is research collaboration with over fifty scientists from across the globe.

Highly eminent and leading scientists from leading universities of USA, Canada, UK, Europe, China, Japan and other countries have been regularly visiting the department for a short visit to collaborate in research with the local faculty. This is ongoing process to enhance the quality of the research in this institution. Some of the faculty members are member of several editorial boards of leading and reputed international journals of mathematical and engineering sciences.
Faculty

The department of mathematics has a highly qualified and distinguished faculty. The faculty has a national and international standing and recognition. To mention, but a few achievements, the faculty is recipient of extraordinary honors such as Fellows of Pakistan Academy of Sciences (01), civil awards conferred by the Government of Pakistan (02), the most productive scientists of the OIC countries (02), gold medals Pakistan Academy of Sciences. Two faculty members were Fellows of the Institute of Mathematics and its Applications, UK and Chartered Mathematician, UK. Faculty members of the Department of Mathematics have published more than four hundreds research articles in ISI journals of Mathematical and Engineering Sciences during this short period of its existence, which can be considered as an extraordinary achievement.

Computer Facilities

The mission of CIIT is to ensure that all students and staff have a wide range of IT facilities available to them and that all students entering CIIT have the chance to acquire sound IT skills. Various Computer Algebra Systems (math software), such as MATLab, MAPLE, MATHEMATICA, SCIENTIFIC WORKPLACE, etc are available for students and researchers. The pervasive network provides access to local and national electronic information services, library catalogue, email, virtual learning environments, and all the other facilities needed for learning and research.

Seminars

Apart from normal teaching, the faculty of Mathematics department is actively involved in research. The department of Mathematics provides a forum for researchers and graduate students to present their latest research. Scientists and educationists from outside the department are also invited to stimulate the intellectual life of the department through their lectures and seminars.

Department of Mathematics - Abbottabad Campus

Department of Mathematics provides service courses in different departments of CIIT Abbottabad, in the most professional manner. The faculty also interacts in research with the scientists working in other disciplines of this institute. Research groups are working in Theoretical and Computational Fluid Mechanics, Algebra and Analysis. The Department of Mathematics is emerging as a center of excellence. The department has initiated MS leading to Ph.D. program both in Pure and Applied Mathematics with special emphasis on Fluid Mechanics since Fall 2004.

Research Areas

We are offering various subjects in different fields of mathematics. Currently our faculty and graduate students are actively involved in research in Complex Analysis, Fluid Mechanics, Functional Analysis, Fuzzy Algebra, Geometric Function Theory, Group Theory and Generalizations, Heat and Mass Transfer, Mathematical Finance, Number Theory, Relativity and Topology.

Laboratories

A well equipped laboratory has been designed for graduate students that contain latest computers with all required accessories and soft wares, such as FORTRAN, MATHEMATICA, MATLAB, MAPLE, LATEX, SCINTIFIC WORK PLACE and TECPLOT.

Library

For learning and research environment a departmental library has been established and is being updated according to the requirements. More than 1000 books and 200 journals are available on Applied and Pure Mathematics. The facility to access international journals is also provided to the researchers.

Workshops /Symposia

To raise the standard of research in various branches of mathematics the local mathematicians should interact with the eminent researchers and scientists of international repute. Realizing the fact, the department of Mathematics is committed to arrange Conferences, Seminars, Symposia and Workshops for pursing its objectives.

Workshops

The department also organized many one day workshops on Computational and Industrial Mathematics chaired by well-known Professors and talks were delivered by researchers from national universities and scientific organizations.

Symposia

A series of symposia on “Computational Complexities, Innovations and Solutions (CCIS)” is also a regular annual feature of the department. The primary objective of the Symposium is to bring together computational scientists from all fields of the traditional sciences like Mathematics, Physics, Chemistry, Biology, Medicine and all branches of Engineering, in order to share methods and ideas and to regroup original contributions from all these fields. The purpose of holding the Symposium is to bring together researchers, educationists, industrialists and scientists to present the achievements done so far and to share the experiences vis-à-vis their respective fields of research.

The 1st Symposium was held under the umbrella of Techno Moot on May 8-9, 2006. The second two-day Symposium of the series CCIS was held on May 8-9, 2007. The Symposium was a great success, as renowned scientists and researchers from different universities and institutions participated and delivered illuminating talks. Total 21 talks were delivered during the symposium by 5 international and 16 national speakers.

The Department organized its third two-day Symposium of the series CCIS on May 12-13, 2007 in which 22 talks were delivered.

The department organized its 4th Symposium (CCIS) on May 11, 12, 2009 in which 26 talks were delivered and 5th on May 10-11, 2010.

Area of Specialization

- Complex Analysis
- Fluid Mechanics
- Functional Analysis
- Fuzzy Algebra
- Geometric Function Theory
- Group Theory and Generalizations
- Heat and Mass Transfer
- Mathematical Finance
- Number Theory
- Relativity
- Topology

Department of Mathematics - Lahore Campus

The Lahore campus of COMSATS Institute of Information Technology became functional in 2002. Initially the Department of Mathematical Sciences was established at the campus. The department was a cluster of Mathematics, Physics and Computer Sciences departments. The Department of Mathematics started functioning as an independent department in 2005. The Department as a part of Mathematical Sciences and as an independent unit has been providing services to almost all the disciplines offered at the campus. The major users of the services of mathematics department have been the Engineering, Physics and Computer Sciences departments.

The major aim of the department is to impart quality mathematical education to undergraduate and postgraduate students at the campus. The department aims at establishing a Center of Excellence in Mathematics so that it can impart quality research and education and can train its students to serve the nation as better mathematicians.

Research Areas

The Department offers rich variety of research areas for its students. Some research areas that are being explored at the department include Group Theory, Functional Analysis, Commutative Algebra, Graph Theory, Differential Equations, Mathematical Modeling, Numerical Analysis and Optimization, Complex Analysis, Non convex Analysis, Mathematical Statistics, Survey Methods, Quality Management and related areas.

Library

The Mathematics department at CIIT, Lahore has rich library resource at its disposal. The Mathematics section of the library contains large number of collections on classical and advanced texts on the subject. The students have full access to digital library resources of HEC via CIIT Lahore.

Computer Facilities

The wide availability of computer facilities has greatly increased the importance of Mathematics. Large numbers of computer software are available to solve analytical and numerical problems in the subject. The department has the facility of providing topnotch computing environment to its students. Presently, the department is equipped with the powerful mathematical and statistical software like MATLAB, MATHEMATICA, MAPLE, SPSS, SAS, MATHCAD and many more.

Workshops

The Department of Mathematics has always been at the forefront to organize the events that bring close mathematicians from various institutes. The workshop named Mathematics Day is one such event. The workshop attracted more than 100 mathematicians from various institutes of the province. The department is planning to hold a workshop on Effective Mathematics Teaching at College and University Level and another workshop of Statistical/Mathematical modeling in near future.

Area of Specialization

- Complex Analysis
- Computational Fluid Mechanics
- Computational Mathematics
- Convex and Non convex Analysis
- Convex and Nonlinear Analysis
- Electrodynamics
- Fluid Mechanics
- Geometric Function theory
- Heat & Mass Transfer
- Hyperbolic Conservation Laws
- Modeling and Simulation
- Numerical Analysis
- Numerical Mathematics (Nonlinear Equations and related areas)

Faculty Members of the Department of Mathematics

Islamabad Campus

Professors

- Dr. Muhammad Aslam Noor, PhD, Brunel University, UK
- Dr. Anwar Hossain, PhD, Dhaka University, Bangladesh
- Dr. Aftab Khan, PhD, Quaid-i-Azam University Islamabad, Pakistan
- Dr. Khalida Inayat Noor, PhD, University of Wales, UK
- Dr. Tahira Haroon, Chairman, Post Doctorate, University of Wales Swansea, UK, PhD Quaid-i-Azam University Islamabad, Pakistan
- Dr. Saleem Asghar, PhD, Quaid-e-Azam University Islamabad, Pakistan

Advisors

- Dr. Noor Muhammad Larik, PhD, University of Southenpton, UK
- Dr. Akhtar Hussain, PhD, Quaid-i-Azam University Islamabad, Pakistan

Associate Professors

- Dr. Shamsul Qamar, PhD, Otto-Von- Guericke University Magdeburg, Germany
- Dr. Akbar Azam, PhD, Quaid-i-Azam University Islamabad, Pakistan
- Dr. Moiz-ud-Din Khan, HoD PhD, Bahauddin Zakaria University Multan, Pakistan

Assistant Professors

- Dr. Ishtiaq Ali, PhD, Chinese Academy of Sciences, China
- Dr. Sobia Sultana, PhD, Abdus Salam School of Mathematical Sciences GC University Lahore, Pakistan
- Dr. Abdullah Shah, PhD, Chinese Academy of Sciences, China
- Dr. Mahmood ul Hassan , Post Doctorate , University of Auckland, New Zealand, PhD, Brunel University of UK
- Dr. Saeed Islam, PhD, Herbin Insitute of Technology Shenzhen, China
- Dr. Shams-ul-Islam, PhD, Graduate School of Chinese Academy of Sciences Beijing, China
- Dr. Farkhanda Ikhlaq Chohan, PhD, Kagoshina University, Japan
- Dr. Muhammad Rauf Ahmad, PhD, (On Study Leave)
- Dr. Tanveer Akbar, PhD, University of Strasbroug, France
- Dr. Masood Anwar, Post Doctorate, University of Windsor, Canada, PhD, National College of Business Administration & Economics Lahore, Pakistan
- Manshoor Ahmed, MS, COMSATS Institute of Information Technology Islamabad, Pakistan (On Study Leave)
- Muhammad Mushtaq, MS, Norwegian University of Science & Technology, Norway

Besides, 55 Lecturers and 8 Research Associates are also associated with this department.

Abbottabad Campus

Advisors

- Dr. Dost Muhammad, PhD, University of Michigan, USA
- Dr. Mir Asadullah, PhD, University of Essex, UK

Assistant Professors

- Dr. Madad Khan, PhD, Quaid-i-Azam University Islamabad, Pakistan

- Dr. Saqib Hussain, PhD, COMSATS Institute of Information Technology Islamabad, Pakistan
- Dr. Abdul Sami Awan, PhD, GC University Lahore, Pakistan
- Dr. Sultan Hussain, PhD GC University Lahore, Pakistan
- Dr. Usman Ashraf, PhD, GC University Lahore, Pakistan
- Dr. Saima Anis, PhD, Quaid-i-Azam University Islamabad, Pakistan
- Dr. Asghar Khan, PhD, Quaid-i-Azam University Islamabad, Pakistan
- Dr. Zahid Ahmad, PhD University of Punjab Lahore, Pakistan
- Naila Kalsoom, MS, COMSAT Institute of Information Technology Abbottabad, Pakistan (EoL)
- Ali Ahmad Farooq, M.Phil, Quaid-i-Azam University Islamabad, Pakistan
- Syed Zulfiqar Ali Zaidi, MSc, University of Peshawar, Pakistan
- Dr. Muhammad Saeed Lodhi, PhD, University of Hradec Kralove, Czech
- Hasina Khan, MS COMSATS Institute of Information Technology Abbottabad Pakistan

Besides, 26 Lecturers and 1 Research Associates are also associated with this department.

Lahore Campus

Advisor

- Dr. Ghulam Qanber Abbasi, PhD, Mascow University USSR, Russia

Associate Professors

- Dr. M. Qaisar Shahbaz, PhD, National College of Business Administration & Economics Lahore, Pakistan
- Dr. Shahadat Ali Taj, PhD, Brunel University, UK
- Dr. Muhammad Arif Rafiq, PhD Bahaud din Zakariya University Multan, Pakistan

Assistant Professors

- Dr. Tajammal Hussain, PhD, University of Punjab Lahore, Pakistan
- Dr. Ijaz Hussain, PhD, University of Klagenfurt, Vienna
- Dr. Hafiz Abdul Wajid, PhD, University of Strathclyde, UK
- Dr. Imran Anwar, PhD, GC University Lahore, Pakistan
- Dr. Imran Siddique, PhD GC University Lahore, Pakistan
- Dr. Sarfraz Ahmad, PhD, GC University Lahore, Pakistan (On Study Leave)
- Dr. Tariq Javaid Zia, PhD, Chinese Academy of Sciences Beijing China
- Dr. Imran Ahmad, PhD, GC University Lahore, Pakistan (On Study Leave)
- Dr. Amir Mahmood, PhD, GC University Lahore, Pakistan
- Dr. Saman Shahbaz, PhD, National College of Business Administration & Economics Lahore, Pakistan
- Dr. Kashif Ali, PhD, GC University Lahore, Pakistan (On Study Leave)
- Majid Hassan Khattak, MS, University of New South Wales Sydney, Australia
- Hassan Mahmood Chohan, MSc University of Punjab Lahore, Pakistan
- Irfan Yousaf, M.Phil, University of Punjab Lahore, Pakistan (On Study Leave)
- Muhammad Yousaf, MSc, University of Punjab Lahore, Pakistan (On Study Leave)
- Kashif Nazar, MSc, Lahore University of Management Sciences Lahore, Pakistan
- M. Rafiullah, MSc, Shah Abdul Latif University Khairpur, Pakistan
- Muhammad Mohsin, M.Phil, University of Punjab Lahore, Pakistan (On Study Leave)
- Syed Muhammad Irfan, M.Phil University of Punjab Lahore, Pakistan

Besides, 17 Lecturers are also associated with this department.

Wah Campus

Advisor

- Dr. Munir Akhtar, PhD, University of Southampton, UK

Assistant Professor

- Dr. Akmal Javaid, PhD, Graduate University of Chinese Academy of Science, Beijing, China
- Dr. Muhammad Kamran, PhD, Abdus Salam School of Mathematical Sciences GC University Lahore, Pakistan
- Ms. Shabieh Farwa, M. Phil, Quaid-i-Azam University Islamabad, Pakistan (On Study Leave)
- Naila Kanwal, M.Phil , Quaid-i-Azam University Islamabad, Pakistan
- Syedah Maedah Kazmi, M.Phil, Quaid-i-Azam University Islamabad, Pakistan

Besides, 8 Lecturers and a Research Associate is also associated with this department.

Department of Mathematics

Program: MS and PhD Mathematics

Program	MS/PhD Mathematics
Eligibility	A 16 years degree in the relevant field having first division (through out) or CGPA of 2.5/4.0 from an accredited educational institution for admission into MS Program.For admission in PhD, MS with 70% marks or CGPA of 3.0/4.0 is required.
Campus Offering	Islamabad, Abbottabad (MS), Wah (MS) & Lahore

Why to Choose Mathematics at CIIT

The Department aims to pursue excellence in Mathematics through teaching and research by developing appropriate curricula and teaching practices, acquiring talented faculty members, and providing an environment conducive to teaching, research and learning. The students are encouraged to develop new ideas in research and to apply them in real world problems.

Career Potential/Career Prospects

A degree in Mathematics will prepare students with suitable qualifications for jobs in the department of statistics, actuarial sciences, mathematical modeling, and cryptography; for teaching as well as for research studies leading to PhD. and an exciting research career in these fields.

Department of Meteorology

We in Pakistan despite fully recognizing the potential applications of meteorological science, Remote Sensing (RS) and Geographic Information System (GIS) have not been able to make much headway. Department of Meteorology made a start in 2005 to focus our attention on these multidisciplinary fields and their significance to Pakistan, and to make sincere and serious efforts for the growth and advancement of education and research in this field.

Campus Offering Program

Islamabad Campus

MS and PhD in Meteorology
MS in Remote Sensing & GIS
MS in Meteorology (Seismology)

Facilities

Remote Sensing Lab

Remote Sensing labs are well equipped with the state of the art hardware and software. ERDAS imagine image processing software has been installed on Pentium IV machines. The lab is fully equipped with state of the art HP plotter and Scanner. In addition, the Remote Sensing lab hosts Xeon Server Systems as well as a huge data bank of satellite data purchased and archived from satellite ground stations. The data bank includes SPOT, Landsat, Ikonos, NOAA-AVHRR, MODIS and Aster data of various years. The labs offer a peaceful environment where students can carry out their research in an innovative way.

GIS Lab

Geographic Information System labs are also well equipped with the state of the art hardware and software paramount for geographical research. GPS, Arc GIS, Arc View, Map Info, and Arc Info soft wares are installed on Pentium IV machines. The labs are offering an environment where students can carry out peacefully their research and projects in an innovative way.

Astronomical Observatory

The Department of Meteorology maintains an automatic 'MEADE 8 inch LX200-ACF' telescope and 'DSI PRO II' monochrome CCD Camera to monitor astronomical events and night time observations. These instruments offer a range of applications for researchers and ameture astronomers. There have been arranged moon sighting events at CIIT campus for the students and public in the past.

Synoptic Labs

The department includes a powerful computing environment with a network of workstations. Department scientists use computer to run various state-of-the-art regional and global atmospheric models. Real-time meteorological data are downloaded and processed by the department to support its research and teaching missions. The department also utilizes the laboratory facilities available in Pakistan Meteorological Department (PMD), Islamabad.

The department has established its own meteorological research laboratory equipped with the most advanced equipment and computers vital for performing the experiments and will impart basic training to the students. Some of the important equipments are;

1. Automatic Weather Station (AWS)

Automatic Weather Station offers high performance in a very compact design, robust and lightweight, easy to install, field-proven reliability and accuracy, low power consumption, wide selection of sensors, extensive calculation and data logging capacity, user-friendly set-up and graphical display software. The basic sensors suite measures wind speed/direction, pressure, temperature, relative humidity and precipitation. AWS systems are widely used in:

- Climatologically measurements
- Hydrological networks
- Energy production and management
- Building automation
- Environmental research
- Sport and recreational activities

2. Laser Ceilometer

The Laser Ceilometers' is a compact and lightweight instrument for cloud base height and vertical visibility measurements. It is able to detect three cloud layers simultaneously. The reflection of light caused by clouds, precipitation or other obscuration is analyzed and used to determine the cloud base height. The main advantages of laser ceilometers are;

- ✓ Measurement range from 0 to 7.5 km
- ✓ Excellent performance both at high and low altitudes
- ✓ Reliable operation in all weather conditions
- ✓ Cloud detection during precipitation

3. Visibility Sensor

Visibility Sensor measures transparency of the atmosphere and calculates its extension coefficient and meteorological optical range (MOR) values. Main advantages of visibility sensor are;

- ✓ Runway Visual Range (RVR) application
- ✓ Accurate and traceable measurement
- ✓ Range up to 75 km
- ✓ Can be used for aeronautical and SYNOPTIC visibility measurements

Pyranometer

The pyranometer is designed for continuous outdoor use. Due to its flat spectral sensitivity from 300 to 3000 nm, it can be used in natural sunlight, under plant canopies, in green houses or buildings and inverted to measure reflected solar radiation. The pyranometer consists of a thermopile sensor, housing, dome and cable. The thermopile is coated with a black absorbent coating. The paint absorbs the radiation and converts it to heat. The resultant temperature difference is converted to a voltage by the copper-constantan thermopile.

Lightning Detector

Lightning Detector is used for judging the danger of lightning. It can pick up electrical activity as far as 40 miles away and track the storm as it approaches. The detector has Cloud-to-Ground Lightning range from 0 to 30 nautical miles with direction finding to one of eight compass octants (N, NE, E, SE, S, SW, W, NW). Omni directional Cloud Lightning range is 0 to 30 nautical miles.

In addition to the above mentioned equipment the department is in the process of getting the Differential Optical Absorption Spectroscopy (DOAS) in near future. DOAS allows for the determination of different trace gas concentrations at the same time without disturbing the chemical behaviors of the substances to be investigated. The technique measures chemical concentrations by matching the spectral absorption patterns of known molecules to absorption patterns in light that has traversed a long path in the atmosphere.

Research Collaboration

CIIT is developing linkages with research and development organizations and industries for the development of quality human resources in the vital field of Meteorology, Atmospheric Science, Remote Sensing/GIS, Climatology, Seismology and Global Warming etc. Furthermore, these facilities can also be utilized to train private and public sector organization professionals by offering, short and long term professional academic and practical courses to the executives and technicians, for the enhancement of their expertise. In this connection CIIT has signed memorandum of understanding (MOU) with some research and development organizations. Thus, department of Meteorology will collaborate with organizations like Pakistan Meteorological Department (PMD), WAPDA, NESCOM, SUPARCO etc. to work on problems of applied nature in the field of Atmospheric Science, Climatology, Remote Sensing/GIS, Seismology and many others.
The MOUs signed between CIIT and University of Illinois Urbana Champaign (UIUC) is of great importance for the research activities carried out in the department. With this MOU

the department sends some of its most suitable MS student every year for a period of 4 months to conduct the research activities during the last semester of their study.

Department of Meteorology

Programs:

- MS and PhD Meteorology
- MS- Remote Sensing and GIS
- MS Meteorology (Seismology)

Eligibility	A 16 years degree in the relevant field in first division (through out) or CGPA of 2.5/4.0 from an accredited educational institution for admission into MS Program. For admission in PhD, MS with 70% marks or CGPA of 3.0/4.0 is required.
Campus Offering	Islamabad

Why Meteorology at CIIT?

The program aims to provide consultancy, solutions and future trends in the areas of Climate change, Hydrology, Snow & Ice, Agriculture & Forest, Oceanography, Land use & Land cover, Geology and a range of relevant state-of-the-art technologies.

PhD Dissertation

Student is required to submit dissertation on the completion of research work. The topic of research, and subsequently the PhD dissertation, shall be meaningful and representative of the subject matter. It shall form a distinct contribution to knowledge, and afford evidence of originality, either by discovery of new facts or by the exercise of independent judgment.

Students seeking admission in PhD may have the following options for PhD dissertation;

Marine Meteorology
Numerical Weather Prediction
Agro Meteorology
Aviation Meteorology
Climatology
Seismology
Remote Sensing and GIS
Hydrology and Water Resources
Glacier Monitoring
Urban Planning and Development
Agriculture and Forest Management Oceanography and Coastal Monitoring Geology and Geophysics

Astronomical Event “Moon at Perigee” held on April 23, 2010 at COMSATS Institute of Information Technology (CIIT), Islamabad.

Astronomical Event “Moon at Aphelion” held on June 19, 2010

Department of Physics

Physics is a study aimed at unraveling the laws of nature and understanding how they operate. It has established itself as a powerful tool of far reaching applicability, both directly and through spin offs. The development of technology spearheaded by physics leads to the creation of new industry, e.g. electronics, lasers, communications, alternative energy sources, semi- and super-conductors, computers, and information technology. These technologies have transformed the society and have left a deep imprint on the fabric of human development. Over the last few decades, several branches of physics have been remodeled as engineering sciences. These are at the cutting edge of the technology revolution. While searching for fundamental constituents of matter and their forces, it is helping to use laws of nature to design and develop devices leading to optical and quantum computers.

More recently, the 'reductionist' approach of physics has led to some mergers of various disciplines of physics, chemistry, biology, and engineering into new interdisciplinary fields of nanoscience and technology, biophysics, genetic engineering, etc.

Campuses Offering Programs

Islamabad

- MS and PhD Physics
- MS Nanotechnology

Lahore

- MS Physics

Specific Entry Requirements:

Applicants seeking admission in MS Program in Physics must have completed 16 years of education with 1st division or CGPA of 2.5/4.0 in one of the following subjects:

- Physics
- Computer Science (with BSc in Physics and Mathematics)
- Mathematics (Applied)
- Computer Engineering
- Engineering Sciences
- BE in Electrical Engineering
- BS in Material Science/Metallurgical Engineering
- BE in Mechatronics

Candidates majoring in subjects other than physics will be required to take some additional pre-requisite courses.

For admission in PhD, the applicants must have completed MS (18 years of education) in Physics with a minimum of 70% marks or CGPA of 3.0/4.0.

Why Physics at CIIT?

The objective is to provide the students with a broad-based theoretical knowledge as well as enhanced experimental and computational skills to enable them to handle challenging research problems.

Career Potential/Career Prospects:

After pursuing a degree in Physics, ample opportunities are available for the students to go abroad and pursue their higher studies on Scholarships which will be brought to them by the Department.

The students will also find equal opportunities to join local universities and other Research and Development organizations across the country to start their professional careers at handsome salaries.

They can also move to interdisciplinary areas and join Engineering Institutions and Medical Centers and other fields according to their specialization background.

Graduate Students at Department of Physics, CIIT Islamabad Campus developing indigenous with Undergraduate students by giving them a helping hand, in order to develop a MOKE experiment for the study of Magnetic thin films for setting up an Automated Biosensor setup.

Department of Physics - Islamabad Campus

Over the last few decades, several branches of physics have been remodeled as engineering sciences. These are at the cutting edge of the technology revolution. While searching for fundamental constituents of matter and their forces, it is helping to use laws of nature to design and develop devices leading to optical and quantum computers.

Lab Facilities

The Department of Physics has highly qualified faculty with diverse research interests in both theoretical and experimental physics, materials science, and electronics.

In Pakistan, a major problem for scientists aspiring to explore events at the cutting edge of science has been the inaccessibility of experimental facilities including modern fabrication, growth, and characterization facilities. With the increasing importance of nano-scale materials and devices in the technologies of the future, this need has become even more urgent. The Department of Physics has, under some approved mega-projects, developed state-of-the-art laboratories for research in the above mentioned field. These laboratories are unique in Pakistan in terms of the experimental facilities and expertise they offer, as listed below:

- ✓ Design and Fabrication of Micro- and Nanoelectronic Devices for Applications
- ✓ Design Tool: TCAD Simulation and Modeling Package
- ✓ Environment: Class (1000) Clean room

Research Facilities:

State of the art research facilities are provided at the Department along with advanced tools and equipment like, RF and DC Magnetron Sputtering, Plasma Enhanced Chemical Vapor Deposition (PECVD), Electron Beam Evaporator, Photolithography, Reactive Ion Etching, Furnaces, Spin coater, Wet etching benches, Optical microscope and Spectroscopic Ellipsometer.

General User Facilities for Characterization
Scanning Probe Microscopy (SPM)
Dynamic Temperature X-Ray Diffraction (DTXD)
X-Ray Fluorescence Spectroscopy (XRFS),
MDC CV system for I-V/C-V/G-V characterization and CVBT analysis Hall Effect System (o.37 T, 0.55 T and 1 T)
Semiconductor Characterization System (fully integrated)
Differential Hall Measurement set up with transient Ion Drift Measurement (TIDM)
Microwave Annealing System connected with in-situ metrology unit Cryogenic Probe System, Thermo Electronic Measurement System

Laboratories:

Optics Laboratory

The laboratory has discrete laser sources and optical components to conduct experiments related to light and optical fibers. It has complete sets of equipment to study different optical phenomena, characterization of optical fibers, and optical amplification. In addition, fully equipped laser and vacuum laboratories are also being established.

Graduate Teaching Laboratory

This laboratory is equipped with modern equipment for sample synthesis and characterization, such as X-ray diffraction, scanning electron microscope, spectrometers, and vibrating sample magnetometer, etc.

Research Groups

1. High Energy Physics Group

Research Interests

Quark gluon plasma, finite temperature field theories, study and analysis of heavy particle decays in Standard Model and Minimal Super symmetric Standard Model, applications to cosmology and early universe.

Research facilities

Establishment of a regular node in the ALICE, LHC (CERN) grid is underway.

2. Radiation Physics Group

Research Interests

Heavy Ion Interaction Studies, Environmental Radiation Dosimeter, Track Detection Methodology and Applications, Radiation Effects in Various Materials, Geological/Cosmological Studies, Neutron Activation Analysis and Applications.

Research Facilities

HP (Ge) Gamma Ray Spectrometer, NaI (Tl) Gamma Ray Spectrometer, Alpha Particle Spectrometer, Radon Gas Detection System, Automatic Scanning System to Measure Radiation Tracks in Solids, Optical Microscopes, Annealing Furnaces, Radiation Sources and Survey Monitors, G.M. BF-3 Neutron Detector and Surface Barrier Detectors.

3. Applied Thermal Physics Group

Research Interests

Preparation and Characterizations of superconductors, thermal insulators, composites, ferrites, and nanoparticles.

Research Facilities

Thin film coating unit, dc electrical resistively and thermal transport properties measurements.

4. Magnetic Materials Group

Research Interests

Study and applications of magnetic interactions in nanoparticles,

thin films, multi layers and magnetic semiconductors.

Research Facilities

Nano particle synthesis via wet chemistry and solgel routes, vibrating sample magnetometer (3 Tesla, 50 400 K).

5. Nano Materials Synthesis Group

Research Interests

Synthesis and applications of semiconductor oxide nanostructures and nano materials.

Research Facilities

Planetary ball mill, Uniaxial press UV-VIS spectroscopy, Hydro-thermal cells and complete wet chemical synthesis.

6. Nano Materials Applications Group

Research Interests

Nanostructure growth phenomena, waveguide, biosensors, magnetic nanostructures, semiconductor nanostructures, Fuel cells, solar cells incorporating nanoparticles.

Research Facilities

UHV growth system, room temperature and low temperature growth.

7. Advanced Electronics Group

Research Interests

Classical and Quantum Optics Engineering, Quantum Computing, Computer Generated Holography and Associative Memory, Fiber Optical Sensors Development.

Research Facilities

Photon Counting/Detecting System, Photo multiplier tubes, Dual Channel 8 GHz Acquisition Board, Lock-in-amplifier, Oscilloscope 40 GHz, Wave Function Generator, Power Meter.

8. Thin Films Technology Research Group

Research Interests

TFT research group covers the fabrication of II-VI semiconductor compound materials thin films and characterization including structural, optical and electrical measurements. The research interests also includes solar cell fabrication and IR detectors

Research Facilities

High vacuum coating unit, close spaced sublimation technique, laser coating vacuum system, high temperature receptivity measurements system, IV characterization unit, annealing unit, UV-VIS-NIR spectrophotometer.

9. Lasers & Applied Photonics Group

Research Interests

Atomic & Molecular Spectroscopy, Technological applications of Fixed Frequency and Tunable Lasers, Laser Deposited Thin Films, Ultrafast Optics, Low-Pressure Glow Discharges.

Research Facilities

Different Laser Systems, Vacuum Systems, Spectrometers, Detection Electronics & Characterization Equipment, High Voltage Power Supplies, and other related Specialized Equipment are being acquired.

International Research Collaborations

- University of Albany, NY, USA.
- University of Lancaster, UK.
- ALICE experiment in LHC (CERN), Geneva, Switzerland.
- A&M Texas, Austin, TX, USA.
- University of Illinois at Urbana Champaign, USA.
- Queen Mary College University of London, UK.
- University of Bologna, Italy
- Technical University, Darmstadt,
- Germany.
- Tsinghua University, Beijing, China.
- Institute of Physics, Belgrade, Serbia.
- JINR, Dubna, Moscow Region, Russia.
- Technical University of Berlin, Germany.
- University of Geneva, Switzerland.
- University of Calgary, Canada.

Department of Physics-Lahore Campus

Short Introduction

The MS/PhD program offered by Department of CIIT Lahore is designed to compete with the standards of education and academic facilities offered by contemporary universities .Moreover its sound curriculum imparts enriched knowledge to our students which helps them to equip themselves with professional skills to join any organization to start a career. It also enables the students to develop a research aptitude which will help them in their PhD study later. The Department offers laboratory facilities available in the Campus as well as has collaboration with the Research laboratories of other universities and R & D organizations where students can be sent to get experimental results and analysis and also are trained in an interactive atmosphere of learning. This also opens new research avenues on them and the interaction is fruitful in terms of flourishing a reputation as a good professional which later on helps in getting jobs in different organizations and universities. Those who want to pursue their career as researchers are offered fellowships and scholarships .They are also sent abroad on different short term training programs which are fully funded by the university, which enhances their outlook as a researcher. This, subsequently not only benefits the students but also nourishes the overall research environment in the Department. In addition to that ,PhD scholarships are also brought to the students through different national and international funding A vibrant research and academic atmosphere awaits our students in the Department of Physics where their, motivation, devotion and hardwork is regarded in true spirit.

Areas of Research

Material Science and Nano Technology

Material Science is an interdisciplinary field of research which involves the properties of matter and how they are applied in science and engineering. The study of materials at nano scale has formed a new branch of physics known as nanoscience or nanotechnology which is at the forefront of the world wide

universities and research institutes. Material Science is contributing in many areas of biotechnology, computer industry, optical communication etc.
The Department has PhD faculty members which have a research background in the fields of materials and nanoscience. They are in the phase of developing their own labs. Currently they have collaboration with other universities to utilize their lab facilities for material development characterization.

Plasma Physics

Plasma Physics is a study of matter in its plasma state and its interaction with other materials. It is a sound field of theoretical and experimental research which later finds its applications in Astrophysics, energy resources, food processing industry, and medical science. A physicist with a strong research background in plasma physics can enter into world renowned research centers and universities for pursuing higher studies and a good career. One of the senior faculty members is conducting active research in the field of Plasma Physics and has been listed in American journal "who is who" as a renowned scientist contributing to the field of science.

Laser and Fiber Optics Communication/Optoelectronics

As everyone is acquainted with the significance of Lasers and fiber Optics communication in the present world .These are one of the most dynamic and applied fields in all branches of science and telecommunication. Opportunities are available in the Department not only to conduct research under the guidance of our competent faculty members but also to send the students to other countries on Scholarships or making available other sources of funding to elevate your career as a professional.

Quantum Computing

Combining Physics, Mathematics and Computer Science, Quantum Computing is developed as a fascinating area of research which involves study of atoms and how they can be used to perform memory and processing tasks. One of the senior faculty members is providing guidance to those who opt to go in this dynamic field of research which can provide an enormous improving in the processing speed of existing computers.

Faculty Members of the Department of Physics

Islamabad Campus

Professor

- Dr. Arshad Saleem Bhatti, Dean, PhD, University of Cambridge, UK
- Dr. Sajid Qamar, Chairman, PhD, Quaid-i-Azam University, Islamabad, Pakistan

Advisors

- Dr. M. Zafar Iqbal, PhD, University of Manchester, UK
- Dr. Ashraf Ata, PhD, University of Birmingham, UK
- Dr. Javaid Anwar, Post Doctorate, Hong Kong Baptist University Hong Kong, China, Ph.D, Quaid-i-Azam University Islamabad, Pakistan
- Dr. Kamal-ud-Din Ahmed, PhD, University of London, UK
- Dr. (Mrs.) Nasim Zafar, PhD, University of Cambridge, UK
- Dr. Hameed Ahmed Khan, PhD, University of Birmingham, UK
- Aziz Ahmed Qureshi, MSc, University of Peshawar, Pakistan

Associate Professors

- Dr. Ishaq Ahmad, HoD, PhD, Quaid-i-Azam university Islamabad, Pakistan
- Dr. Ahmer Naweed, PhD, University of Manachusetts, USA
- Dr. Sadia Manzoor, PhD, Quiad-i-Azam University Islamabad, Pakistan
- Dr. Nazar Abbas Shah, PhD, Quaid-i-Azam University Islamabad, Pakistan
- Dr. Muhammad Anis-ur-Rehman, PhD, Quaid-i-Azam University Islamabad, Pakistan
- Dr. Farida P. Tahir, Post Doctorate University of Kansas, USA, PhD, Quaid-i-Azam University Islamabad, Pakistan
- Dr. Mahnaz Qader Haseeb, PhD, Quaid-e-Azam University Islamabad, Pakistan

Assistant Professors

- Dr. Muhammad Kamran, PhD, Graduate University of Chinese Academy of Science Beijing, China
- Dr. Mubarak Ali, Post Doctoral, Technical University Istanbul, Turkey, PhD, Universiti Teknologi ,Malaysia
- Dr. Najeeb-ur-Rehman, PhD, Quaid-i-Azam University Islamabad, Pakistan
- Dr. Waqqar Ahmed, PhD, University of Twente, Netherland
- Dr. Umair Manzoor, PhD, Korea Advanced Institute of Science & Technology, South Korea
- Dr. Ijaz Ahmed, PhD, Quid-i-Azam University Islamabad, Pakistan
- Muhammad Irfan Memon, BE, Hamdard University Islamabad, Pakistan
- Asif Iqbal Zia, MSc, GC University Lahore, Pakistan (On Study leave)
- Khalid Khan, BSc, UET Taxila, Pakistan
- Malik Muhammad Asif, M.Phil, Quaid-i-Azam University Islamabad, Pakistan
- Manzar Abbas, M.Phil, Quid-i-Azam University Islamabad, Pakistan

Besides, 38 Lecturers and 25 Research Associates is also associated with this department.

Lahore Campus

Professor

- Dr. Ashfaq Ahmad, Post-Doctorate, Miyagi National College of Technology Natori, Japan, PhD, Pakistan
- Dr. Syed Javaid Iqbal, PhD, University of Malaya, Malaysia

Associate Professor

- Dr. Muhammad Asif, PhD, Institute of Plasma Physics Chinese Academy of Sciences, China

Assistant Professor

- Dr. Shoaib Munir, PhD, University of Southampton, UK (On Study Leave)
- Dr. Salman Naeem Khan, PhD, University of Zhejiang, China
- Dr. Muhammad Ashfaq Ahmad, PhD, Harbin Institute of Technology, China
- Dr. Abdul Rashid, PhD, Johannes Kepler University, Linz
- Dr. Mazhar Hussain, PhD, GC University Lahore, Pakistan
- Rashid Najeeb, M.Phil, GC University Lahore, Pakistan
- Shahzada Junaid Shareef, MSc GC University Lahore Pakistan (On Study Leave)
- Nusrat Rafique, M.Phil, Quaid-i-Azam University Islamabad, Pakistan (On Study Leave)
- Lt. Col (R) Javed Iqbal Abid, M.Phil, University of Punjab Lahore, Pakistan

Besides, 12 Lecturers are also associated with this department.

Department of Physics

Program:

- MS and PhD Physics
- MS Nanotechnology

Eligibility	Applicants seeking admission in MS Program in Physics must have completed 16 years of education with 1st division or CGPA of 2.5/4.0 in the subjects: Physics, Computer Science (with BSc. in Physics and Mathematics), Mathematics (Applied), Computer Engineering, Engineering Sciences, BE in Electrical Engineering, B S in Material Science/Metallurgical Engineering, BE in Mechatronics. Candidates majoring in subjects other than physics will be required to take some additional pre-requisite courses.For admission in PhD, MS with 70% marks or CGPA of 3.0/4.0 is required.
Campus Offering	Islamabad, Lahore (MS)

Why to choose Physics at CIIT?

The objective is to provide the students with a broad-based theoretical knowledge as well as enhanced experimental and computational skills to enable them to handle challenging research problems.

Career Potential/Career Prospects

A degree in Physics will prepare students with suitable qualifications for jobs in the relevant department; for teaching as well as for research studies leading to PhD. and an exciting research career in these fields.

Department of Pharmacy

Pharmacists are the third largest health care professional group in the world and currently, there are about 6000 pharmacists in Pakistan. However, according to the WHO recommended pharmacist/ population ratio of 1:2000 for optimal health care delivery, more than 75,000 pharmacists are required for the current population. Further, the role of pharmacist in the health care system is escalating day by day due to the introduction of uncounted new drugs, emergence of new resistant microbes, and the changes in the health care delivery systems.

This situation has created a huge demand for more professional pharmacists, not only for the country, but also in the world where there is a severe shortage of pharmacists. In view of the present and emerging needs of the pharmacy profession, decided to launch the Department of Pharmacy at its Abbottabad Campus. The major theme behind this idea was to play an active role to cater the national health care needs through a broad-based higher and professional education of pharmacy. In order to deliver quality education in the field of pharmaceutical sciences, the department has arranged excellent facilities and has the services of internationally qualified faculty members.

Program: MS/PhD in Pharmacy

Program	MS/PhD Pharmacy
Eligibility	For MS, a sixteen years degree in Pharmacy (Pharm. D./ B. Pharm.) from an accredited educational institution, with first division or CGPA 2.5/4, with no third division or D grade throughout academic career. For PhD, MS/ MPhil or its equivalent degree in the relevant field, from an accredited educational institution, with 70% marks or CGPA 3.0, with no third division or D grade throughout academic career.
Campus Offering	Abbottabad

Why to choose Pharmacy at CIIT?

- Abbottabad is a very beautiful, peaceful and scenic education city with a very nice weather.
- 09 permanent PhD faculty members at pharmacy department.
- CIIT Abbottabad has singed an MoU with Ayub Medical Institute to provide clinical pharmacy clerkship and other facilities to graduate program.
- Well-equipped research laboratories having sophisticated instruments such as HPLC, GC, GC-MS, FTIR, capillary electrophoresis, atomic absorption spectrophotometer etc.

Career Potential/Career Prospects

Pharmacists are qualified health professionals and are known as drug experts. Highly qualified pharmacists provide better advice to patients, doctors and nurses ensuring that medicines are used rationally, safely and effectively. The number of existing pharmacists is extremely low compared to the needs of health system of Pakistan. Therefore, the number of pharmacy education institutes is increasing very rapidly and there is a dire need of highly qualified personnels. Highly qualified pharmacists are also involved in manufacturing of medicine, quality control/quality assurance, R & D and marketing of medicines in key positions.

Highly qualified pharmacist is preferred in:

- Various public and private universities as professors and researchers.
- The selection of provincial and federal drug inspectors and drug analyst.
- The selection of hospital pharmacist in government and military hospitals.
- Pharmaceutical industry as production/quality assurance/R & D/warehouse manager.
- WHO programs and NGO's.

Abbottabad Campus

Professors

- Dr. Nisar-Ur-Rehman, Chairman, PhD
- Dr. Izhar Hussain, HoD, Post Doctorate, Kansas State University, USA ; PhD, Oregon State University, USA

Advisors

- Dr. Qazi Najam us Saqib, PhD, University of Karachi

Associate Professor

- Dr. Jamshed Iqbal, PhD, University of Bonn, Germany(On Study Leave)
- Dr. Ghulam Murtaza, PhD, IUB, Bahawalpur
- Dr. Sami Siraj, PhD, China Pharmaceutical University, Nanjing, China
- Dr. Khalida Mushtaq, MBBS, Nishtar Medical College, Multan, Pakistan
- Dr. Muhammad Yasir, PhD, Gyeongsang National University, South Korea
- Dr. Abdul Mannan, PhD, QAU, Islamabad
- Dr. Abdul Jabbar Shah, PhD, University of Karachi (On Study Leave)
- Dr. Taous Khan, PhD, Kyungpook National University, Korea
- Fiaz Alam, Mphil (Pharmacognosy), Gomal University D.I. Khan, Pakistan
- Sabeeh Mohsin, MPhil, University of Bahawalpur

Besides, Seven lecturers are also associated with this department.

Get Started

After going through our prospectus for your area of interest in graduate studies, following are the course of actions, which you would need follow:

⇒ Select Program, Specializations area & Courses.
⇒ Fill application form.
⇒ Submit admission application form complete in all respect to admission office at the respective campus you are interested.
⇒ Wait for the merit list display.
⇒ If selected then get enrolled with the specific department by deposit necessary fees/dues within specified time. For details, please see the next page.
⇒ Get accommodation, if required.
⇒ Start of classes as notified by the department.

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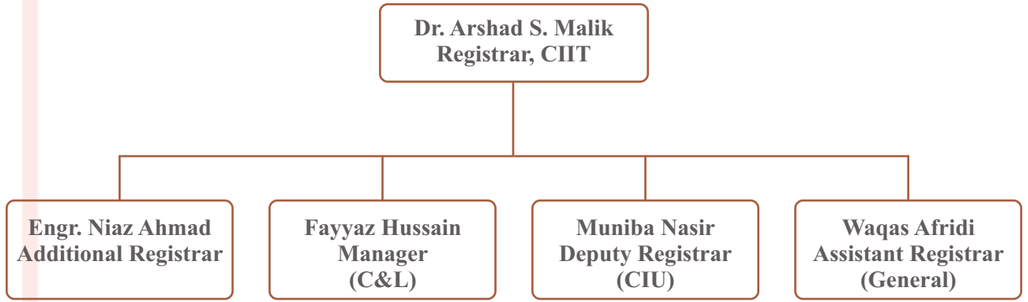

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