



Computing & Information Sciences

College of Computing & Information Sciences

Computer and Information Technology have revolutionized the way organizations conduct their business and have created a huge demand for computer experts with multi-disciplinary orientation.

College of Computing and Information Sciences [CoCIS] takes pride in announcing that more than 90% of our students start working in industry even before getting the degree.

<p>NCEAC accreditation</p> 	<p>Congratulations</p>
	<p>BSCS program is accredited by National computing Education Accreditation council (NCEAC) of HEC.</p>

Although CoCIS offers a wide range of programs designed to meet industry requirements. Factors that differentiate us from any other university offering Computer Science and related programs include following:

- Research-intensive separate and industry oriented MS programs
- Project-intensive BS programs that include projects in each course as well as two individual industry-based final year projects
- Innovative BS curricula that include latest tools and technologies that have increased the market acceptability of our graduates enormously
- Rigorously monitored academic programs to ensure the continuous quality improvement

Programs offered by CoCIS

Bachelor Programs	
BS Computer Science	Eligibility: Intermediate with minimum 50% marks, A Levels or equivalent
BS Enterprise Resource Planning	
Masters (Conversion) Programs	
MCS – Computer Science	Eligibility: 2 years bachelor degree with minimum 2nd Division
PGD– Enterprise Resource Planning	
MSc – Enterprise Resource Planning	
MS Programs	
MS Computer Science*	Eligibility: 4 Years University Education, Overall 16 Years Education
MS Software Engineering*	
PhD Program	
PhD Computer Science*	Eligibility: 6 Years University Education, Overall 18 Years Education

*Details of Ph.D. and MS programs are given in the area of "Graduate School of Science and Engineering (GSSE)"



Bachelor and Master Programs in Computer Science [BSCS, MCS] enable the graduates to fulfill job market requirements in the software industry. We are in close coordination with software industry and offer market based elective courses in areas such as Mobile Application Development, Web Engineering, Content Management Systems, Game Development, Cloud Computing etc. There are numerous career opportunities in the industry for our graduates that include but are not limited to Software Engineer, System Analyst, Database Administrator and Project Managers.

BS, PGD and MSc Programs in Enterprise Resource Planning [BS-ERP, PGD-ERP, MSc-ERP] are designed to integrate the area of Computer Sciences and Management Sciences with more than 10 hands-on Enterprise Resource Planning courses using leading ERP solution such as SAP, Oracle and Microsoft Dynamics. Students acquire the right blend of managerial skills coupled with the hands on experience of implementing and managing ERPs in areas, such as finance, manufacturing & production, sales & marketing, human resource etc.

CoCIS Students Market Acceptability

Over 90% of our students start working in the industry even before getting the degree. They do not have to search for jobs as our strong internship program and industry focused final projects enable them to impress the prospective employers long before their graduation.

Graduates from College of Computing & Information Sciences take up challenging careers in software houses, networking solution providers, telecom companies, internet service providers, ERP Consultancy Firms and I.T. departments of public and private sector companies including multinationals and banks.

Research Areas & Respective Supervisors

A dedicated team of qualified researchers including six foreign qualified Ph.Ds are teaching and supervising research in diverse and upcoming areas of technology. Given are the details of the research areas and their respective supervisors:

Research Area	Supervisor
Machine Learning/Data Sciences	Mr. Sohail Imran
Parallel & distributed Computing	Dr. Ayaz ul Hassan
Computer Networks / Data Mining	Dr. M. Kamran Nishat
Internet of things / Persuasive computing	Dr. Muhammad Taha Jilani
Information Security	Dr. Maaz Bin Ahmed
Image and Pattern Recognition	Dr. Affan Alim
Software Architecture & Design	Mr. Ayub Latif
Block chain and Distributed Cloud	Dr. Muhammad Khalid Khan
Evolutionary Computing	Dr. Salman Ahmed

CoCIS Research & Publications

College of Computing & Information Sciences takes pride in claiming that students and faculty of graduate program have published more than 150 international and national papers in national and international journals and conferences:

Year	No. of Publications
2018-19	40
2017-18	22
2016-17	15
2015-16	16
2014-15	12
2013-14	10
2012-13	19
2011-12	22
2010-11	17
2009-10	18
2008-09	20
2007-08	25
2006-07	17
2005-06	12
2004-05	09

CoCIS Industrial Projects & Project Exhibition

Project exhibition is a regular activity that takes place every semester. Students are assigned projects in all the courses and are asked to exhibit their work by the end of semester. Handsome prize money is awarded to the students every semester in the project exhibition.

Apart from the course project, students are required to take final year industry project. Until now, students have under taken over 977 such projects for 534 organizations:

Industry Based Final Year Projects

Year	No. of Projects	No. of Organizations
2018 - 19	134	63
2017 - 18	95	51
2016 - 17	80	44
2015 - 16	103	30
2014 - 15	83	21
2013 - 14	67	17
2012 - 13	44	25
2011 - 12	30	15
2010 - 11	28	13
2009 - 10	21	9
2008 - 09	64	51
2007 - 08	88	81
2006 - 07	140	72
2005 - 06	160	81
2004 - 05	124	62
2003 - 04	127	69
2002 - 03	62	41

CoCIS Mentoring Groups

At the time of admission, every student is assigned a mentor (faculty member) for the entire duration of his/her program of studies at KIET. The assigned faculty members hold a mentoring session on fortnightly basis with their group of students. The aim of the mentoring sessions is to provide mentoring, help, guidance and support to our students. The role of the mentor is to monitor the academic progress of his wards, guide, support and help the weak students which results in boosting the morale of weak students.

CoCIS Student Counseling Session

This exercise is mostly related to the students of first year. The first semester students have to meet the counselor every week whereas second semester students are required to attend counseling session once in two weeks. The role of the counselor is to provide one window operations to the new students. He is responsible to take the students queries to the respective department and get them resolved.



KIET Team to Represented Pakistan at International Collegiate Programming Contest World Final in Beijing, China

A two-day “International Collegiate Programming Contest (ICPC)” West Asia Region was held at Lahore under the auspices of Association for Computing Machinery (ACM) which is headquartered at Baylor University, Texas.

More than 80 teams participated, including students of College of Computing & Information Sciences, Karachi Institute of Economics & Technology (KIET).

The overall top performance trophy of “ICPC 2017” was awarded to KIET along with 2 Gold Medals and 3 Shields. Team “Binary01” seen here with President KIET, has been selected to represent Pakistan in ICPC World Final in Beijing, China.



CoCIS Star Performers

CoCIS encourages students to participate in all the competitions held at various universities and fund their expenses. Student societies hold regular technical sessions and internal competitions for the preparation of such events. Following table summarises the performance of our students in the last four years:

University	Event	Competition	Position
Fast University, Karachi	Procom 2019	Bilingual Debate Competetion	3rd Position
Capital University, Isb	Excite Cup 2019	Software Project Exhibition	3rd Position
IBA, Karachi	Probattle 2019	Speed Programming	Runner Up
Sindh Madarsatul Islam	Imagine Cup 2019	Project Exhibition	Select for Final Exhibition held in HEC headquater islamabad
Fast Univeristy, Faisalabad	Daira 2019	Speed Programming, Gaming, Debat	Runner up in some Competition
NU Fast, Karachi	PROCOM 2018	Networking Competition	Winner
NU Fast, Karachi	PROCOM 2018	Project Exhibition	Winner
NU Fast, Karachi	PROCOM 2018	Graphic Design, Speed Programming, Mobile App Development, Network Design	Runner Up
IBA, Karachi	ProBattle 2018	Project Exhibition	Winner
IBA, Karachi	ProBattle 2018	Speed Programming, Data Analysis, Network Design	Runner up
UMT, Lahore	ACM ICPC 2017	International Collegiate Programming Contest	Secure 1st& 10th Position out of 97 teams from all Pakistan. Also won 2 Fastest Problem Solver Gold medal. And qualify for ICPC World Final.
UoK, Karachi	Karachi University Leadership Conference (KULC) 2017	Students perform different activities and Competition related to Team Work, Leadership & Personal Development	PAF KIET students got outstanding performance nomination. 200+ participants Students from 20+ Institutes
IoBM, Karachi	Zenith Leadership and Development Conference Karachi- 2017	Unlock game, Ice-Breaker, Ad-Making, Cleaning Activity, Bridging, Indoor Activity	Won Best Team Award out of 20+ Teams

Two day conference

“3rd International Conference on Computing & Information Sciences – ICCIS 2019”

College of Computing & Information Sciences (CoCIS) successfully organized 3rd International Conference on Computing & Information Sciences [ICCIS-2019] at Karachi Institute of Economics & Technology, Main Campus on 3 & 4 April, 2019.

The aim of ICCIS-2019 was to provide a forum to present new research and share results of the emerging technologies in the fields of computing and information sciences.

The National and International keynote speakers included Facebook Technical Program Manager Mr. Mohammad Vakil from USA, Bahrain University’s Professor Dr. Nasser Metwally from Bahrain, Habib University Associate Dean Dr. Mohammad Shahid Shaikh, FAST University Dean Dr. Muhammad Atif Tahir and Muhammad



Ali Jinnah University President Dr. Zubair A Shaikh. More than 20 universities from across the country participated in the conference including Karachi’s FUUAST, NED University, Sir Syed University and Jinnah University for Women, UMT Lahore, PMAS Arid Agriculture University, Rawalpindi, National College of Business Administration and Economics, Rahim Yar Khan FAST-NUCES, Islamabad, Quaid-e-Azam College of Engineering and Technology and COMSAT, Sahiwal.

A total of 72 research paper abstracts were submitted in the two-day conference of which, 20 papers were selected for the final presentation.

In his opening address, KIET President Air Vice Marshal (Retd) Tubrez Asif said he was confident that the forum would help provide a bridge between the academia and the industry. He said that the quality papers were presented and the plenary sessions were educative and brought forth new ideas and information.



Sindh Higher Education Commission Universities and Boards Department Secretary Mr. Muhammad Riazuddin was the chief guest of Opening Ceremony. He expressing keen interest in the conference appreciated the efforts of the researchers and students.

The Chief Guest of the conference closing ceremony was Dr. Shariq Khoja (CEO, Tech4life). He Appreciate the efforts of KIET for providing the platform to the students, faculty and researches.

The Event was closed by Chair, Technical Program Committee Dr. Salman Ahmed Khan. He thanked all the Guest, Keynote Speakers, Participant and he appreciates the efforts of organizing committee and Technical committee for the successful conference.



CoCIS Student Societies

KIET-ACM

CoCIS faculty and students have established KIET's ACM Student Chapter. This society is responsible to bring various Workshops, Competitions and Events for the CS students. Such activities not only increase the interest of the students in the computing discipline but also introduce them to the latest developments in the field of Information Technology. It has open door to the latest research in the field of computing and information technology through the access of ACM Digital Library, ACM Career News and ACM Tech News. Students also become eligible for massive discounts on all ACM Competitions, Workshops, Seminars and Conferences.

COMBAT - The Computing Battle

College of Computing and information Sciences also host a regular annual event named COMBAT. This is a national level event in which universities from across the country participate in various competitions. The First COMBAT was held in 2009. Since then, the event has come a long way and every time more competitions and excitement is added.

CODE JAM

As the first activity, KIET's ACM Student Chapter arranged the Inter Campus Speed Programming Competition 'CODE JAM'. This was an effort to strengthen the programming skills of students and give them a chance to compete with their fellows.



Alumni Dinner

KIET successfully hosted Cras Stellae Alumni Dinner 2017 at "THE VENUE Askari-IV" on April 01, 2017. The purpose was to arrange a get together for alumni so that they may renew their ties with the Institute and get the opportunity to relive their memories. It was also intended as a farewell dinner for the current passing out students and to wish them luck in future endeavors.

The evening started off with recitation of the Holy Quran followed by the MoC's welcoming speech. Junior students presented multiple dramas and skits, demonstrating the life of university students. These were followed by mimicry and funny title awards to the notable students. Alumni and guests thoroughly enjoyed the event.

The Chief Guest was a senior computer science professional Mr. Badar Sami who is also the ex-HoD of UBIT at KU. Director CoCIS, Dr. Muhammad Khalid Khan thanked the chief guest, alumni and the organizing team in his address. He discussed his 10 years journey with KIET and informed the audience about CoCIS future plans.

The event attracted more than 150 alumni who were photographed and entertained. There were even some alumni from 2004 who came specially to celebrate their successes with the university. Alumni left the event with great memories and a strong anticipation for events of this kind in the future. The event ended with a grand ambassadorial dinner.



ComBat'19 - The Computing Battle

held on 11th & 12th April, 2019

On 11th & 12th of April, 2019 the College of Computing and Information Science(CoCIS) of Karachi Institute of Economic and Technology (KIET) organized the flagship event Combat 2019.

College of Computing and Information Sciences host a regular annual event named COMBAT. This is a national level event in which students from universities countrywide participate in various competitions. The first COMBAT was held in 2009. Since then, the event has come a long way.

The year event ComBat'19 (The Computing Battle) event featured 27 competitions of Software Engineering, Computer Networks, Databases, Web and Mobile Applications, Graphic Designing, Electronics, and Computer Gaming. The aim of the event was to bring out the abilities of the students and to provide them a platform for the competition to foster their expertise in the field of IT and related discipline. Cash prizes were awarded to the winners of competitions.



The Combat19 was started by ribbon cutting ceremony followed by opening remarks of patron Combat'19 Mr. Sohail Imran. The students were too excited for the competition and have inquired about starting of the competition even before the start of the opening ceremony.

The event attracted more than 1000 participants from all major universities of Pakistan that includes Institute of Business

Administration (IBA), Karachi, NED University of Engineering and Technology, FAST National University, University of Karachi (KU), Sir Syed University of Engineering and Technology (SSUET), Shaheed Zulfiqar Ali Bhutto Institute of Science and Technology (SZABIST), Bahria University, Mohammad Ali Jinnah University(MAJU), Institute of Business & Technology (Biztek), Iqra University (IU), Usman Institute of Technology (UIT), Federal Urdu University, Sindh Madressatul Islam University, DHA Suffa University.

The event also comprised of several guest speaking sessions on "Algorithm", "The Role of Women in Tech" and "IoT", conducted by Mr. Muhammad Mustaqeem, Ms. Anum Kamran and Syed Umaid Ahmed respectively. In addition to this "Big Data", "SAP as a Career" and "Entrepreneurship" were also the topic of other speakers.

The event Combat'19 brought some new version of competitions to test logical, interactive, innovative, creative and mathematical skills of the students.

At the middle of the day, a theater show named "Mehfil e Chhoru" was played for the participants. The play was highly enjoyed by the attendees.



Research and Publications

Some of the recent research and publications of the faculty and students of the College of Computing & Information Sciences are given below:

Name of Author	Title of paper	Name of Journal with Details of Publications
Salman Ahmed Khan	Goal Programming-Based Two-Tier Multi-Criteria Decision-Making Approach for Wind Turbine Selection	Applied Artificial Intelligence, Volume 33, Issue 1 (2019)
Maaz Bin Ahmed	Implementation of Insider Threat Detection System Using Honeypot Based Sensors and Threat Analytics	Future of Information and Communication Conference (2019)
Muhammad Taha Jilani	Skin depth verification of the electromagnetic waves for hydrocarbon detection	International Journal of Applied Electromagnetics and Mechanics 2019
Faraz Idris Khan	Understanding Security Requirements and Challenges in Internet of Things (IoT): A Review	Journal Comp. Netw. and Communications (2019)
Abdul Wahab Khan	Achieving High Availability in Cloud through Live Migration	KIET Journal of Computing & Information Sciences Volume 2 Issue 1 Jan – June 2019
Shah Muhammad Emaduddin	Robust Feature Extraction Techniques in Speech Recognition: A Comparative Analysis	International Conference on Computing & Information Sciences 2019
Sohail Imran	Mining Diagnostic Investigation Process Technology and Management Engineering (2019)	International Conference on Future Information
Hira Beenish	Efficient V2G Model on Smart Grid Vehicles Using AI	IEEE GPECOM 2019
Hira Beenish, Muhammad Fahad	5G A Review on Existing Technologies	iCOMET 2019
Hira Beenish	Design and Implementation of an android app controlled Fire Fighting Robot	IIEC-2019 Ned University Engineering & technology
Hira Beenish	Improving Descriptive Writing Through Modeling At Middle Level	Book Chapter https://www.morebooks.shop/bookprice_offer_b4534a2df422abdf365a3ab66e05ac476b04aec7 2019
Afshan Saad	Cloud computing A paradigm of more insider threats	International Conference on Computing System Engineering 2019
Afshan Saad	Comparison of Manual testing and automation testing.	ICSOFT 2019
Afshan Saad	Assistive Technology In HCI benefit	Women in Software Engineering @ the 13th European Conference on Software Architecture (ECSA 2019) and the 23rd Systems and Software Product Line Conference (SPLC 2019)

Name of Author	Title of paper	Name of Journal with Details of Publications
Salman Ahmed Khan	Application of swarm intelligence algorithms to multi-objective distributed local area network topology design problem	Book chapter in "Swarm Intelligence - Volume 3" by prestigious IET (2018)
Muhammad Khalid Khan	Information Processing in EventWeb through Detection and Analysis of Connections between Events	International Journal of Advanced Computer Science and Applications 2018
Muhammad Khalid Khan	Cluster Analysis of Pakistani Terrorism Events to Support Counterterrorism	Societies 2018
Mohammad Affan Alim	The most discriminant sub bands for face recognition: A novel information-theoretic framework	International Journal of Wavelets, Multiresolution and Information Processing (2018)
Muhammad Taha Jilani	Effects of defected ground structure slot tuning on frequency and circuit parameters of bandpass filter	Journal of Optoelectronics and Advanced Materials (2018)
M. Taha. Jilani et.al	An Implementation of IoT-based Microwave Sensing System	Microelectronics Journal 2018, ISI indexed, JCR Impact factor: 1.163
Muhammad Taha Jilani	An Integrated System for the Issuance of e-Passports	7th International Conference on Advances in Computing, Electronics and Communication-ACEC2018
Hira Anwar Khan	Usability Evaluation Methods for Jurassic Carnival	In Proceedings of 3rd International Conference on Recent Trends in Computer Science and Electronics, Thailand (2018)
Hira Anwar Khan	Usability Evaluation Method through SUS Analysis for Coin Party	International Journal of Pure and Applied Mathematics Volume 118 No. 9 2018, 171-181
Shah Muhammad Emaduddin	Multi-Class Emotion Detection (MCED) using Textual Analysis	International Journal of Advanced Computer Science and Applications 2018
Muhammad Naveed	Performance Evaluation of Unmanned Aerial Vehicles for Video based Surveillance Application	KIET Journal of Computing And Information Science, vol 1, issue 1, July-Dec 2018.
Shah Muhammad Emaduddin, Hira Beenish	A Survey on Data Prioritization Algorithms in BAN	Journal of Wireless Personal Communication (2018)
Muhammad Ayub Latif, Kashif Bashir	Practices for Achieving Accuracy in Software Costing and Estimation	KIET JOURNAL OF COMPUTING AND INFORMATION SCIENCES, vol 1, issue 1, July-Dec 2018.
Hira Beenish	ROLE OF ICT IN FOSTERING THE PERFORMANCE OF EDUCATION SECTOR OF AFRICA	Research Article in EAI International Conference for Research, Innovation and Development for Africa 2018
Hira Beenish	The Role of SEO Techniques to Enhanced Performance and Improved Ranking for Intelli-Web Shop	International Conference on Computing & Information Sciences (2018)

Name of Author	Title of paper	Name of Journal with Details of Publications
M. Taha. Jilani et.al	Pilot-Based Time Domain SNR Estimation for Broadcasting OFDM Systems	Journal of Computer Networks and Communications 2018
Maaz Bin Ahmad, M. Asif, Imtiaz A Taj, Muhammad Tahir	A Generalized Multi-Layer Framework for Video Coding to Select Prediction Parameters	IEEE Access, 2018
M. Taha. Jilani et.al	Enhanced Security Mechanism for Emerging Home Area Networks	The International Conference on Information Technologies, Kaunas (2018)
Maaz Bin Ahmad, Iftikhar ul Sami, Muhammad Asif, Rafi Ullah	DoS/DDoS Detection for E-Healthcare in Internet of Things	International Journal Of Advanced Computer Science And Applications, Vol 9, issue 1, 2018
Muhammad Fahad	Heart Diseases Prediction using Data Mining and its Techniques- A Survey	International Conference on Computing & Information Sciences 2018
Maaz Bin Ahmed, Rafi Ullah, Syed Ali Hassan, M. Asif	Prediction type decision for advanced video coding: A machine learning approach	Sci.Int.(Lahore) (2017)
Maaz Bin Ahmad, Syed Ali Hassan, Imran Ul Haq, M. Asif, Moeen Tayyab	An Efficient Scheme for Real-time Information Storage and Retrieval Systems: A Hybrid Approach	International Journal of Advanced Computer Science and Applications, Vol.8, issue 8, pp-427-431. 2017
Muhammad Khalid Khan, Muhammad Taha Jilani, Maaz Bin Ahmed, Muhammad Ahmed	Agent-based Architecture For Enterprise-wideData Integration	Sci.Int.(Lahore),29(1),107-111,2017
Muhammad Taha Jilani, Muhammad Khalid Khan, Maaz Bin Ahmed, Mobeen Khan,	A security framework for wireless body area network based smart healthcare system	International Conference for Young Researchers in Informatics, Mathematics and Engineering, CEUR-WS Press.pp.80-85, 2017
Khurum Nazir Junejo	Distribution Shift Resilient Discrimination Information Space for SVM Classification	The 8th IEEE Annual Information Technology, Electronics and Mobile Communication Conference (2017) IEEE
M. Taha. Jilani , A. M. Khan, V. Jeoti	Noise Power Estimation for Broadcasting OFDM Systems	30th IEEE Canadian Conference on Electrical and Computer Engineering (IEEE CCECE 2017), Windsor, Ontario, Canada
Khurum Nazir Junejo, Iftikhar ul Sami	Predicting Future Gold Rates using Machine Learning Approach	International Journal of Advanced Computer Science and Applications (IJACSA) (2017) The Science and Information (SAI) Organization (Volume 8 – Number 12) 2017
M. Taha. Jilani, S Rizvi, A Aziz, N Armi, G Muhammad, SH Butt	An investigation of energy efficiency in 5G wireless networks	IEEE International Conference on Circuits, System and Simulation (ICCS 2017), London, UK, 2017

Name of Author	Title of paper	Name of Journal with Details of Publications
Muhammad Yaseen Khan, Khurum Nazir Junejo, Shah Muhammad Emaduddin,	Harnessing English Sentiment Lexicons for Polarity Detection in Urdu Tweets: A Baseline Approach	11th International Conference on Semantic Computing 2017 (IEEE)
Muhammad Taha Jilani, Muhammad Khalid Khan, Asad Abbas	Comparative Analysis Of Wireless Technologies For Internet-of-Things Based Smart Farm Science International	Journal, ISI Indexed, HEC-recognized, 2017
Muhammad Khalid Khan, et. al.	Using Predictive Analytics for Predicting Host Availability in Desktop Grids	Volume 10, Issue 1 (2017), Page 245 – 254, International Journal of Grid and Distributed Computing. (ISI Indexed)
Muhammad Khalid Khan, et. al.	Scheduling in Desktop Grid Systems: Theoretical Evaluation of Policies and Frameworks	Volume 8, Issue 1 (2017), Page 119 – 127, International Journal of Advanced Computer Science and Applications. (ISI Indexed)
M. Taha. Jilani	A Security Framework for Wireless Body Area Network based Smart Healthcare System	Joint International Conference on Information Technologies, Kaunas, Lithuania, 2017 (accepted)
M. Asif, Maaz Bin Ahmad, Rafiullah and Syed Ali Hassan	Prediction Type Decision For Advanced Video Coding	A Machine Learning approach. Sci.Int., 29(1), 59-63, 2017. (ISI indexed)
M. Taha. Jilani	Noise Power Estimation for Broadcasting OFDM Systems	30th IEEE Canadian Conference on Electrical and Computer Engineering (IEEE CCECE 2017), Windsor, Ontario, Canada (accepted)
Muhammad Khalid Khan, et. al.	A Group based Fault Tolerant Scheduling Mechanism to Improve the Application Turnaround Time on Desktop Grids	Volume 13, Issue 2 (2016), Page 274-280, International Arab Journal of Information Technology. (Impact Factor: 0.582)
M. Taha. Jilani	A Cyclic Correlation-Based Time Domain Channel Estimation Scheme.	IEEE 6th International Conference on Intelligent and Advanced Systems (ICIAS), Malaysia, 2016.
Muhammad Khalid Khan, Danish Faiz	Evaluating the Impact of Client based CPU Scheduling Policies on the Application's Performance in Desktop Grid Systems	Volume 16, Issue 12 (2016), Page 144-148, International Journal of Computer Science and Network Security. (ISI Indexed)
Muhammad Taha Jilani	Non-destructive characterization of dielectric materials by microwave spectroscopy in LS band	J. Optoelectron. Adv. M., 18(5-6), 587-592, 2016 (IF = 0.383)
Muhammad Asif, Imtiaz A.Taj, S.M Ziauddin, Maaz Bin Ahmad and Atif Raza	An efficient inter prediction mode selection scheme for advanced video coding based on motion homogeneity and residual complexity	IEEJ Transactions on Electrical and Electronic Engineering, 2016 (I.F 0.212).
Maaz Bin Ahmad, M. Fahad Abdul Wahab Khan, M. Asif	Toward Securing Medical Document from Insider Attacks	Int'l Journal of Advanced Computer Science and Applications (IJACSA), 2016. (ISI Indexed).

Guest Speaker Sessions

Some of the recent Guest Speaker Sessions held at College of Computing & Information Sciences are given below:

Topic	Guest Name	Designation	Organization
SQL Injection & Prevention	Hassan Ali	Manager Software	Jubilee Life
Arrays / Game Development	Waqar	Software Engineer	HOM
Machine Learning Model Evaluation for Real World Problems	Owais Ahmed	Team Lead	Interactive Health Solution
Agile Project Development	Raja Muhammad	Senior Project Manager	Bank Al-Habib Ltd.
Making Image Using Arrays of thermal sensors	Usama Ayub	Lecturer	NED University
Use of Discrete Mathematics in Software Engineering	S. Imad UR Rehman	SQA Analyst	Contour Software
Talk on Career Guidance	Javed Akbar	Director	Engro Corp
Pillars of TE, Methods	Muhammad Kamran	SQA Analyst & Team Lead	Contour Software
Pillars of OOP	Zain Farooq	Technical Consultant	KE
PLD & Intro to VHDL Programming	Muhammad Zeeshan	Research Associate	ICT RnD
Building World Class Technologies	Naresh Kumar	Cloud Network Analysis	QuickStart
Emerging Technologies in DS	Bilal Tasneem	Manager	UBL

Bachelor of Science in Computer Science (BS-CS)

Rapid growth of I.T. infrastructure in local and foreign organizations has increased the demand for computer professionals. Specialization can be done through 5 elective courses in selected area. The program meets the HEC and international standards for a full-length 4-year bachelor's degree.

YEAR -1		CR-H
CS102	Programming Fundamentals	3+1
CS101	Introduction to Info. & Communication Technologies	2+1
SS313	Pakistan and Islamic Studies	3+0
MKT417	Visionary Leadership & Motivation	2+0
QT104	Algebra & Trigonometry	3+0
COM131	English-I (Proficiency Development)	3+0
MAN102	Principles of Management	3+0
SE201	Object Oriented Programming	3+1
CE101	Basic Electronics	2+1
ACT103	Financial Accounting	3+0

YEAR -2		CR-H
QT104	Calculus & Analytical Geometry	3+0
COM132	English-II (Public Speaking)	3+0
CE201	Digital Logic & Design	2+1
CS102	Data Structures & Algorithms	2+1
QT106	Discrete Mathematics	3+0
COM233	English-III (Official Communication)	3+0
QT105	Differential Equations & Multivariable Calculus	3+0
CS202	Operating Systems	3+1
CE204	Computer Organization & Assembly Language	2+1
CS201	Database Management Systems	3+1

YEAR -3		CR-H
QT303	Numerical Computing	2+1
NW301	Data Communication and Networks	2+1
CS301	Computer Architecture	2+1
MKT423	Technology Entrepreneurship	3+0
NW305	Internet & Intranet Architecture	2+1
QT203	Probability & Statistics	3+0
NW302	Network Programming	3+0
SE405	Object Oriented Analysis & Design	3+0
IS404	Parallel & Distributed Computing	3+0
CS203	Automata Theory	3+0
IPT307	Internship-I	1+0
IPT693	Final Project-I	3+0

YEAR -4		CR-H
SE410	Design & Patterns	3+0
CS204	Human Computer Interaction	3+0
CS402	Artificial Intelligence	3+0
SE302	Software Engineering	3+0
ELE	Elective-1	3+0
ELE	Elective-2	3+0
CS401	Compiler Construction	3+0
CS400	Design & Analysis of Algorithm	3+0
WN401	Cryptography	3+0
IPT407	Internship-II	1+0
IPT695	Final Project-II	3+0

Curriculum Structure			
Area	Cr Hr	Area	Cr Hr
Computer Science	34	Networks	09
Software Engineering	30	Social Sciences	15
Quantitative	17	Management	03
Computer Engineering	06	Internship	02
Accounting & Finance	03	Project	06
Information Systems/ERP	03	Sports	04

Degree Structure	
Durations	: 4 Years
Courses	: 39
Projects	: 2
Internships	: 2
Sports	: 4
Course Cr. Hrs.	: 120 + 6 + 2 + 4
Eligibility:	: Intermediate 50% minimum, A Levels or equivalent

Location: Main Campus and North Nazimabad Campus

| Comprehensive exam is a mandatory requirement.

Bachelor of Science - Enterprise Resource Planning

BS-ERP program is a merger of computer science and management science studies with the focus over next generation Management Information Systems (MIS) also known as Enterprise Resource Planning (ERP) Systems. Students will acquire technical skills for implementing and managing information systems in areas such as finance, economics, management and accounts. Students are prepared to be a Techno Functional consultant of the leading ERP system.

YEAR -1		CR-H
Visionary Leadership & Motivation		1
ERP Fundamentals		3
Principles of Management		3
Pakistan & Islamic Studies		3
Financial Accounting		3
Advanced Business Mathematics		3
Programming Fundamentals		4
English-I (Proficiency)		3
ERP Computing Infrastructure		3
English-II (Written Communication)		3
Cost and Managerial Accounting		3

YEAR -2		CR-H
Object Oriented Programming		4
ERP Communication Infrastructure		3
Principles of Marketing		3
Introduction to Business Finance		3
ERP Business Process Management & Reengineering		3
Database Management System		4
ERP Application Analysis & Design		3
English-III (Public Speaking)		3
Securing ERP Systems		3
Financial Management		3

YEAR -3		CR-H
Marketing Management		3
ERP Implementation Methodologies		3
ERP Financial Management		3
ERP Application Development		3
ERP Portal Management		3
ERP Customer Relationship Management		3
ERP Data Management		3
Strategic Management		3
ERP Human Resource Management		3
ERP Inventory Management		3

YEAR -4		CR-H
ERP Sales & Distribution Management		3
Auditing ERP Systems		3
ERP Mobile Applications		3
ERP Production Management		3
Elective-1		3
Elective-2		3
Elective-3		3
Elective-4		3
Final Project-I		3
Final Project-II		3

Curriculum Structure			
Area	Cr Hr	Area	Cr Hr
Computer Science & Information Systems	33	Management	9
Accounting & Finance	17	Quantitative	6
Enterprise Resource Planning	30	Social Sciences	14
Marketing	9	Internship	2
		Project	6

Degree Structure	
Durations	: 4 Years
Courses	: 39
Projects	: 2
Internships	: 2
Course Cr. Hrs	: 118 + 6 + 2
Eligibility	: Intermediate 50% minimum, A Levels or equivalent

Location: City Campus | *Comprehensive exam is a mandatory requirement.*

Masters in Computer Science (MCS)

Specialization: **Software Engineering**

MCS program provides the necessary foundation and specialization in Software Engineering and Telecom & Networks. Graduates of MCS program are now successful in the industry as IT managers, networks/systems administrators, analysts and software engineers. This is a conversion program designed for students having no Computer Science background. Graduates of MCS program are also eligible to pursue the higher-level MS and PhD degree programs.

YEAR -1		CR-H
CS101	Introduction to Information and Comm. Technologies	3+0
SE102	Programming Fundamentals	3+0
ERP102	ERP Business Process Management & Re-engineering	3+0
SE201	Object Oriented Programming	3+0
NW427	Data Communications & Networks	3+0
ACT201	Financial Accounting	3+0
ECR6509	English-3 Official Communication and Report Writing	3+0
QT106	Discrete Mathematics	3+0
CS201	Database Management Systems	3+0
CS202	Operating Systems	3+0
CS105	Data Structures & Algorithms	3+0
SE405	Object Oriented Analysis & Design	3+0

YEAR -2		CR-H
CS462	Routing & Switching Techniques	3+0
NW401	Cryptography	3+0
SE417	Software Engineering & Project Management	
CS203	Automata Theory	3+0
CS401	Compiler Construction	3+0
CS301	Artificial Intelligence and Expert Systems	3+0
CS	Design & Analysis of Algorithms	3+0
ELE	Elective 1	3+0
ELE	Elective-2	3+0
ELE	Elective-3	3+0
IPT414	Final Project	6+0

Curriculum Structure			
Area	Cr Hr	Area	Cr Hr
Computer Science	18	Networks	9
Software Engineering	15	Social Sciences	3
Quantitative	3	Elective	12
Accounting	3	Project	6
Info. Systems / ERP	3		

Degree Structure	
Durations	: 2 Years
Courses	: 22
Projects	: 2
Credit Hours	: 66 + 6
Eligibility	: Bachelors 50% minimum

Location: City Campus

Comprehensive exam is a mandatory requirement. Student must clear this exam to become eligible for the degree. The curriculum structure, duration and scheduling of each degree program are subject to change without notice.

Incase HEC rules that the minimum credit requirements of a Masters degree after two years bachelors is 90 credit hours then 6 additional courses equivalent 18 credit hours are to be taken by the students for the completion of the degree.

Postgraduate Diploma - Enterprise Resource Planning (PGD-ERP)

The one year PGD-ERP program introduces students to the next generation Management Information Systems (MIS) also known as Enterprise Resource Planning (ERP) Systems. The courses build the foundation of software development skills using latest programming and database platforms. Business knowledge is incorporated through management, accounting and business process engineering courses. ERP systems are introduced with focus on the underlying technologies as well. After completing PGD-ERP program, students can opt for one year MSc-ERP program that will focus on the hands on experience on different ERP modules using leading ERP systems.

YEAR -1		CR-H
Introduction to Information and Comm. Technologies		3
Programming Fundamentals		3
ERP Business Process Management & Reengineering		3
Object Oriented Programming		3
ERP Computing Infrastructure		3
Financial Accounting		3
English-III (Official Communication & Report Writing)		3
Database Management Systems		3
Cost & Managerial Accounting		3
ERP Communication Infrastructure		3
ERP Implementation Methodologies		3
ERP Inventory Management		3

Curriculum Structure			
Area	Cr Hr	Area	Cr Hr
Enterprise Resource Planning	21	Computer Science	6
Accounting & Finance	3	Management	3
Social Science	3		

Degree Structure	
Durations	: 1 Year
Courses	: 12
Credit Hours	: 36
Eligibility	: Bachelors 50% minimum

Location: City Campus

Comprehensive exam is a mandatory requirement. Student must clear this exam to become eligible for the degree. The curriculum structure, duration and scheduling of each degree program are subject to change without notice.

MSc-ERP

MSc-ERP provides students a unique blend of business and next generation Management Information Systems (MIS) also known as Enterprise Resource Planning (ERP) Systems studies. The program is designed to prepare students for a career in management cadre with expertise of utilizing IT for competitive and business advantage. With increasing competition in rapidly growing sectors of economy such as Banking, Telecommunication and FMCG, ERP skills are in great demand.

YEAR -1		CR-H
Introduction to Information and Comm. Technologies		3
Programming Fundamentals		3
ERP Business Process Management & Reengineering		3
Object Oriented Programming		3
ERP Computing Infrastructure		3
Financial Accounting		3
Functional English		3
Database Management Systems		3
ERP Communication Infrastructure		3
ERP Implementation Methodologies		3
ERP Application Analysis & Design		3
ERP Inventory Management		3

YEAR -2		CR-H
ERP Application Development		3
Cost and Managerial Accounting		3
ERP Human Resource Management		3
ERP Financial Management		3
ERP Customer Relationship Management		3
ERP Sales & Distribution Management		3
ERP Production Management		3
Elective 1		3
Elective-2		3
Elective-3		3
Final Year Project I		3
Final Year Project II		3

Curriculum Structure			
Area	Cr Hr	Area	Cr Hr
Computer Science	6	Social Sciences	3
Accounting & Finance	6	Management	3
Enterprise Resource Planning	48	Project	6

Degree Structure	
Durations	: 2 Years
Courses	: 22
Projects	: 2
Credit Hours	: 66 + 6
Eligibility	: Bachelors 50% minimum

Location: City Campus

Comprehensive exam is a mandatory requirement. Student must clear this exam to become eligible for the degree. The curriculum structure, duration and scheduling of each degree program are subject to change without notice.

Incase HEC rules that the minimum credit requirements of a Masters degree after two years bachelors is 90 credit hours then 6 additional courses equivalent 18 credit hours are to be taken by the students for the completion of the degree.

Masters of Science- Enterprise Resource Planning (MSc-ERP) (for BS-CS and BBA 4-years)

The one year MSc-ERP program is designed for students who have 16 years of education in Business and want to jump start their careers. ERP hands on experience enables the graduate to become productive from day one of their employment. A global career awaits for individuals with ERP expertise.

YEAR -1		CR-H
ERP Business Process Management & Reengineering		3
ERP Implementation Methodologies		3
ERP Inventory Management		3
ERP Human Resource Management		3
ERP Financial Management		3
ERP Customer Relationship Management		3
ERP Sales & Distribution Management		3
ERP Production Management		3
ERP Advance Financial Controls		3
Final Year Project I		3
Final Year Project II		3

BBA 4 Years Students have to take five additional courses

Pre-Requisites

Programming Fundamental
Object Oriented Programming

Co-Requisites

Database Management System
ERP Application Analysis and Design
ERP Application Development

Curriculum Structure

Area	Cr Hr	Area	Cr Hr
Enterprise Resource Planning	27	Project	6

Degree Structure

Durations	: 1 Year
Courses	: 9
Project	: 2
Credit Hours	: 27 + 6
Eligibility	: BS-CS, BBA 4 Yrs or equivalent

Location: City Campus

Comprehensive exam is a mandatory requirement. Student must clear this exam to become eligible for the degree. The curriculum structure, duration and scheduling of each degree program are subject to change without notice.

Specializations

Course Code	Course Title	Credit Hours	Pre Req.
Software Engineering			
SE201	Object Oriented Programming	4	CS100
SE210	Principles of Component Programming	3	SE201
SE205	Business Application Analysis & Design	3	CS201
SE301	Business Software Development	3	SE205
SE302	Object Oriented Analysis & Design	3	SE201
SE303	Web Applications Development	3	SE201
SE306	Advance Java Programming	3	CS102
SE304	Visual Programming	3	SE201
SE309	Data Warehouse & Data Mining	3	CS201
SE402	Software Engineering	3	SE302
SE403	Human Computer Interfaces	3	CS402
SE405	Software Project Management	3	SE402
SE406	Multi-tier Programming	3	SE304
SE407	Advanced Computer Graphics	3	CS413
SE408	Systems Programming	3	SE201
SE410	Design & Patterns	3	NW302
SE417	Software Engineering and Project Management	3	SE302
SE450	Software Design & Production Methodologies	3	SE402
SE451	Pattern Recognition & Applications	3	CS402
SE501	Software Architecture & Design	3	SE402
SE502	Software Quality Assurance	3	SE402
SE504	Object Oriented Software Engineering	3	SE402
SE505	Programming Methodologies & Paradigms	3	SE402
SE507	Multimedia Systems	3	SE402
SE555	System Maintainability & Maintenance	3	SE402

Course Code	Course Title	Credit Hours	Pre Req.
Networking & Telecommunications			
NW301	Data Communication & Networks	4	CS202
NW302	Network Programming	3	NW301
NW304	Network Administration	3	CS202
NW305	Routing & Switching	4	NW301
NW306	High Speed Networks	3	NW301
NW307	Electronic Communication System	3	CE101
NW308	Wireless Communication	3	NW301
NW401	Cryptography	3	NW301
NW408	Advanced Data Communication & Networks	3	NW301
NW409	Network & Telecom Management	3	NW301
NW410	Network Protocols	3	NW301
NW416	Network Design & Implementation	3	NW301
NW422	Seminar in Networking	3	NW301
NW423	Multi-Service Networks	3	NW301
NW430	Advanced Routing Techniques	3	NW305
NW501	Network Security	3	NW401
NW502	Mobile Communication	3	NW301
NW503	Digital Switches and Exchanges	3	NW307
NW509	Enhanced Wireless Networks	3	NW306
NW510	Internetworking Architecture & Implementation	3	NW306
NW530	Voice Over IP	3	NW306
NW540	Optical Communication Systems	3	NW306
NW550	Telecommunication Architecture & Services	3	NW409

Specializations

Course Code	Course Title	Credit Hours	Pre Req.
Enterprise Resource Planning			
ERP101	Introduction to MIS & ERP	3	None
ERP102	ERP Business Process Management & Reengineering	3	None
ERP201	ERP Implementation Methodologies	3	ACT201
ERP202	ERP Communication & Computing Infrastructure	3	ERP101
ERP301	ERP Implementation Consultancy	3	ERP201
ERP302	ERP Financial Management	3	ERP201
ERP303	ERP Customer Relationship Management	3	ERP201
ERP306	Advance Financial Controls	3	ERP201
ERP305	ERP Supply Chain Management	3	ERP201
ERP315	ERP System Administration	3	ERP201
ERP412	ERP Production Systems	3	ERP201
ERP414	ERP Material Management	3	ERP201
ERP415	ERP Business Intelligence	3	ERP201
ERP417	ERP Sale & Distribution Management	3	
ERP	Security ERP Systems	3	
ERP	Auditing ERP Systems	3	
ERP	ERP Mobile Application	3	
ERP	ERP Portal Management	3	

Course Code	Course Title	Credit Hours	Pre Req.
Computer Science			
CS100	Programming & Logic Building	4	None
CS110	Computer Programming	4	None
CS101	Introduction to Computer Science	3	None
CS102	Data Structures	4	SE201
CS201	Database Management Systems	4	CS202
CS202	Operating Systems	4	CS101
CS203	Automata Theory	3	QT106
CS302	Distributed Databases	3	CS201
CS400	Design & Analysis of Algorithm	3	CS401
CS401	Compiler Construction	3	CS203
CS402	Artificial Intelligence & Expert Systems	3	SE302
CS405	Neural Networks	3	CS402
CS411	Operation Research	3	QT403
CS413	Computer Graphics	3	CS102
CS502	Advanced Database Mgmt Systems	3	CS302
CS508	Distributed Systems	3	CS202
CS509	Natural Language Processing	3	CS402
CS514	Parallel Computing	3	CS302
CS516	Simulation & Modeling Theory	3	QT403
CS531	Interactive Computer Graphics	3	CS413

Specializations

Course Code	Course Title	Credit Hours	Pre Req.
Computer Engineering			
CE101	Basic Electronics	3	None
CE201	Digital Systems	3	CE101
CE204	Computer Architecture & Assembly Language	3	CE201
Information Systems			
IS101	Accounting Information System	3	ACT102
IS201	Management Information Systems	3	CS101
IS302	E-Commerce Technology	3	IS 201
IS304	Information System Security	3	IS 201
IS305	Info. Sys. Infrastructure Management	3	SE405
IS401	Decision Support Systems	3	IS 201
IS403	Business Process Reengineering	3	IS 201
IS404	Information System Audit & Control	3	SE405
IS405	Business Intelligence	3	SE301
IS409	Strategic Information System	3	IS 201
IS431	Forecasting & Demand Modeling Systems	3	ACT102

