FACULTY OF ENGINEERING & TECHNOLOGY

Dean's Message

The Faculty has thrived to nurture an environment of discourse, engagement and rooted connections with academia, industry and other organizations . Our Faculty and students have represented their research and knowledge through numerous scholarly, industry, and technical publications. Furthermore our Faculty pedagogy took on new and unique forms, including the implementation of Outcome Based Education (OBE). We are fully delved into fostering a culture of continued reflection, learning, and action towards yieldingInclusive and empowered graduates. There is still much work left to do and our commitment to transformative action will continue. Our academic staff is highly qualified, will equipped with international exposure and are involved in cutting edge research.

The vigor at Faculty of Engineering & Technology continues to inspire me each day. I am grateful for the support of our students, faculty, staff, alumni and friends. Your contribution is what makes our progress possible. As we step confidently into future, I look forward to introducing new programs Software Engineering,

Artificial Intelligence and Power Engineering already started (2021) and way of strengthening our faculty. I welcome you to join me as we open this next chapter of Faculty of Engineering and Technology's history together – one that will be full of growth and opportunity.

Prof. Dr. Engr. Intesar Ahmed
Dean Faculty of Engineering & Technology

DEPARTMENT OF ARCHITECTURE

OVERVIEW

A better built environment has the potential to improve the quality of life, give a sense of identity, and create cultural value. An architect's training imparts knowledge in a broad range of subjects and develops the ability to solve complex problem using creativity and design. Trained architects create places that function efficiently, bring all kinds of benefits for their users and value for their clients while responding to the local climate and culture. Architects and planners work with government and municipal authorities to help develop built environment policy with public and private sector clients to design and deliver individual projects and with local communities to help realize their ambitions for the places in which they live. Their domain covers, National & Regional Planning, Master Planning of cities and towns, local areas / municipal planning etc. Architects deal with all types of building designs, urban design & regeneration, interior and landscapes etc. Pakistan Government has started new projects which include Naya Pakistan Housing Schemes and Ravi Front by urban Development Authority. Such projects are the new opportunities provided by the current Government in order to produce refined spaces as well-designed places and spaces contribute to our sense of identity and create cultural value. Architects & Town Planners has always played an active role. The council is responsible for accreditation of Architecture School and has strict standards and codes to retain the quality of architects and to ensure the credibility. Architect's License Examination has been introduced for the integrity and this Examination is concerned with assessing applied knowledge and skills in relation to professional conduct and competence to practice as an Architect. Students are eligible for this exam after the completion of 5-year Bachelor degree of Architecture.

Achievements:

In a short span of time, department of Architecture LCWU has managed to standout in the architectural academia of the country with not just its urge for betterment in instilling the best into its students but also in engaging with the community at global level. The range of achievements aren't just restricted to the extraordinary response from the community for its pioneer batches but the collaborations with other institutions are also something which the team of Architecture Department LCWU is proud of:

- MOU Signing with Institute of Arts & Culture and Provisional Disaster Management Authority
- MOU Signing with Hazara University, Hazara
- MOU Signing with Disaster Risk Mitigation Unit, PBSA Manilla, Phillipines
- Securing prominent positions within the Architectural Industry
- International Webinars in the times of pandemic
- Management of completely online mode of studies with excellence.

B-Arch Degree Program

- The name of the program is Bachelor of Architecture (B. Arch)
- The program is of five years duration (10 semesters)
- The medium of instructions is English

TEACHING METHODOLOGIES:

Lectures & Studio Teaching:

The teaching is fully focused to incorporate lectures, seminars, workshops, studios and field/markets surveys. The various options for online teaching have become salient in the current crisis,

DEGREE PROGRAMS OFFERED

- B-Arch (5 years)
- Postgraduate Diploma in Heritage Management (1 Year Diploma)

LAHORE COLLEGE FOR WOMEN UNIVERSITY

since they can allow students and faculty to continue education without compromising their health and safety. In these pandemic days, it is made ensure that without any compromise on the quality of teaching the online mode is adopted. To address all the aspects related to Online Education LCWU has adopted following measures:

- Formation of committees to evaluate and approve online courses;
- Open Courseware Directory; an online resource for students;
- SOPs for online teaching
- Online grievance redressal Portal;
- Continuous Training of Faculty for online readiness;
- Web TV as a tool of distance learning;
- Coordination with Accreditation Councils.

Open Course Directory (OCD) has been developed in order to facilitate the students. This directory has all the courses detail offered in Architecture Department, LCWU. Students can access this portal from anywhere and anytime. It is ensured through qualitative and periodic assessments that students learn by practicing the design solutions as well as techniques. Therefore it is a complete amalgamation of in campus as well as online learning.

Co-Curricular Participation of Students at Regional & National Forums:

The students are encouraged to participate in curricular and co-curricular activities under the patronage of Pakistan Council of Architects & Town Planners (PCATP) as well as Institute of Architects of Pakistan (IAP).

Serving the purpose of university education is to develop enlightened multi directional perspective in students. The scope of knowledge scope is achieved through informal education in baseline by incorporating students in Debating Society, Dramatics, Literary Society and Environmental and Horticultural Society at LCWU.

Field Surveys & Trips:

To enhance and create understanding of existing Architectural Heritage sites and to broader students' vision field trips and surveys are conducted.

Field trips act as a valuable tool in making learning more engaging and provide unique opportunities for learning certain concepts, including legal concepts by putting them into a more realistic and relevant context. There is a significant increase in participants' factual knowledge and conceptual understanding of site due to field trip.

Internship Program:

A regular Internship program is conducted at Department of Architecture for Students of 3rd year and onwards in renowned architectural firms recognized by PCATP.

Research Projects:

With the Approval of regular statuary bodies of LCWU, Lahore, three research groups listed below are formulated by Architecture Department, LCWU

- Sustainable Construction Management Research Group
- History and Conservation Research Group
- Urban Design and Integration Policies Research Group

NATIONAL & INTERNATIONAL COLLABORATIONS:

Regular seminars and workshops are arranged by Department of Architecture in collaboration with academic and industry partners. The following national level partners have been eminent in this regard:

- Directorate of Building & Research Station, C& W Govt. of Punjab
- Overseas Pakistani Commission , Govt. of Punjab
- Directorate of Archeology , Govt. of Punjab
- TEVTA Secretariat , Govt. of Punjab
- Punjab Disaster Management Authority , Govt. of Punjab
- Disaster Risk Management Unit, PSBA Manilla, Philippines
- Provisional Disaster Management Authority

ADMISSIONS POLICY

The Admissions Policy is standardized as per guidelines of Higher Education Commission and Pakistan Council of Architects & Town Planners (PCATP). An aptitude test will be conducted for admissions in B. Architecture program as partial component of the overall aggregate inclusive Intermediate/A levels score and Aptitude Result.

FACULTY OF ENGINEERING & TECHNOLOGY

Eligibility Criteria for B-Arch
- A Levels (Pre-Engineering)
- F.Sc (Pre- Engineering)
- Intermediate with Physics, Mathematics and Computer Science
- Minimum 60% marks in Intermediate
- Aptitude test (English, Mathematics, Drawing and Creative skills)
- It is mandatory for the students to pass the test with 50% marks.

List of Faculty:
- Ar. Yasmeen Ahmed , Incharge, (MPCATP) (Associate MIAP), Ph.D. (University of The Punjab) - On-going, , Masters in Architecture (University of the Punjab), Bachelors in Architecture (University of Engineering and Technology, Lahore)
- Ar. Maliha Khalid , Asst. Professor (MPCATP), Masters in Architecture (University of the Punjab), Bachelors in Architecture (University of Engineering and Technology, Lahore)
- Ar. Asia Jabeen, Asst. Professor, (MPCATP), Ph.D. (Department of Architecture, University of Engineering and Technology, Lahore) – On-going, Masters in Architecture (University of Engineering and Technology, Lahore), Bachelors in Architecture (University of Engineering and Technology, Lahore)
- Ar. Beenish Hassan, Asst. Professor , (MPCATP), M.S in Environmental Design (Allama Iqbal Open University) Bachelors in Architecture (University of Engineering and Technology, Lahore)
- Sarmad Salahuddin, Asst. Professor
- Ar. Nida Qanber Abbasi, Lecturer (MPCATP) (MIAP), Ph.D. (University of Portsmouth, UK) – On-going, Masters in Architecture (University of the Punjab), Bachelors in Architecture (COMSATS, Lahore)
- Ar. Maryam Jamil, Lecturer (MPCATP) (MIAP), Ph.D. (Department of Architecture, University of Engineering and Technology, Lahore) – On-going, Masters in Architecture (University of Engineering and Technology, Lahore),Bachelors in Architecture (University of Engineering and Technology, Lahore)
- Ar. Khizra Shahzad, Lecturer (MPCATP), Masters in Architecture (Punjab University, Lahore)-On going, Bachelors in Architecture (Lahore College for Women University, Lahore)
- Ms. Izza, Lecturer
- Ms. Farina Shahid, Lecturer
- Ms. Rifza Zahid, Lecturer

Visiting Faculty:
- Ar. Adnan Bashir, Assistant Professor (MPCATP), (A-IAP), Masters of Architecture (University of Engineering & Technology, Lahore), Managing Partner – ARC Consult Design Centre
- Ar. Arsalan Sarwar Tarar, Lecturer (MPCATP) (AIAP), Bachelor of Architecture (University of Gujrat, Gujrat), Master

  of Science in Project Management (The University of Lahore, Lahore) Honorary Secretary- Institute of Architects Pakistan, Chenab Chapter Secretary General-Architects Association Gujrat , Principal Architect-The Urban Studio
- Ar. Fareena Shahid, Lecturer (MPCATP), (A-IAP), Masters of Architecture (University of Engineering & Technology, Lahore) , Principle Architect & Digital Artist at Feen'Arts, Winner of 100 Years Centennial Monument Lahore College for Women University, Lahore
- Ar. Ishrat Shaheen, Lecturer (MPCATP), (A-IAP), Masters in project management (Shaheed Zulfiqal Ali Bhutto Institute of science and technology), Bachelor's degree in Architecture (COMSATS University), Managing Qadri Associate's Lahore Office
- Ar. Aisha Aziz, Lecturer, (MPCATP), Bachelors in Architecture (University of Engineering and Technology, Lahore)
- Ar. Naima Hashmi, Lecturer (MPCATP), Bachelors in Architecture (Lahore College for Women University, Lahore)

FACULTY OF ENGINEERING & TECHNOLOGY

HONORARY FACULTY
- Prof Dr. Tabasum Raza, Associate Dean of Graduate School of Business (GSB), Director of Disaster Risk Management Unit, GSB,Philippines School of Business Administration (PSBA) - Manila, Philippines
- Prof. Dr Nobert Lechner, Professor Emeritus in the College of Architecture, Design, and Construction at Auburn University. Alabama USA
- Prof. Dr. Siddiq A Akbar, (Life Member-PCATP), Professor, Ex-Chairman University of Engineering and Technology,Lahore
- Prof. Dr Nobert Lechner, Professor Emeritus in the College of Architecture, Design, and Construction at Auburn University. Alabama USA

NON TEACHING STAFF
- Mr. M. Safeer, (Lecturer Assistant)
- Mr. Hamza Hussain, (Computer Lab Supervisor)
- Kashif, (Naib Qasid)
- Irfan, (Naib Qasid)
- Shabana, (Naib Qasid)

CONTACT DETAILS:
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DEPARTMENT OF CITY & REGIONAL PLANNING

OVERVIEW

City and Regional Planning (CRP) Department is first department of its kind in a Women University in Pakistan with broader objective of mainstreaming gender in development. The establishment of the CRP Department at LCWU was recommended by the National Curriculum Review Committee (NCRC) on City and Regional Planning in its meetings held at Higher Education Commission (HEC), Regional Office, Karachi. The recommendation to establish CRP department at LCWU was presented by Dr. M. Atiq ur Rahman which was endorsed by the representatives of Pakistan Council of Architecture and Town Planning (PCATP) in NCRC-CRP. As an outcome of the recommendation of NCRC-HEC, the Syndicate of LCWU approved the establishment of CRP Department in the year 2012. The department is accredited by Pakistan Council of Architects & Town Planners (PCATP) vide letter number NO.PCATP/LCWU-CRP-LHR/10/16 dated October 24, 2016. The department has produced 148 qualified Town Planners and aims to add around of 200 Town Planners by the year 2025 as a contribution to strengthen national human resource in the field of City and Regional Planning. Most of the graduates are doing jobs in public and private sector and many are pursuing higher studies in the field of City and Regional Planning in institutions such as NUST, PU, UET and abroad. The Department has established a new program of BS Disaster Management. Under this program, the department aims to produce qualified Disaster Managers having scope of job opportunities in Rescue 1122, National Disaster Management Authority (NDMA), Provincial Disaster Management Authority (PDMA) and other NGOs as well as private sector.

Overview of Disaster Management Program

Disaster management is an emerging discipline and Pakistan lacks qualified Disaster managers and professionals for future needs.

Besides that the International Conference held in Sendai, Japan has formulated a new framework for Disaster Risk Reduction (SFDRR) which has superseded the Hyogo Framework for Action (HFA). The close inter-linkages between sound Disaster Risk Reduction, environmental management and climate change impacts and land use planning require a more systematic and comprehensive approach to disaster management. Considering the importance of Disaster Management for all professions (Doctors, Engineers, Planners, Military officers, Social Scientists, Logisticians, Risk Managers, Decision Makers, etc.) proper education and training is required. There is a severe shortage of qualified and trained professionals in this field besides that gender mainstreaming also very important aspect of the discipline therefore it was highly recommended by the international community where the role of women must be of prime importance. The case of establishing BS DM Program was presented by the chairperson of CRP department in 71st meeting of the academic council held on 6th –August- 2019 vide letter Reg/LCWU/1992/Dated 23-August-2019. The program was launched from fall 2021, after required communication with Higher Education Commission vide letter no. HEC/ACAD/LCWU/BS: DM/2020 July 17, 2020. Disaster Management is an inter-disciplinary and multi-disciplinary academic field devoted to various aspects of disaster management across societies and cultures. This program aspires to provide disaster management professionals and specialists for public and private sector Organizations, Institutions and Authorities who can plan, manage, and evaluate interventions in the field of disaster management.

DEGREE PROGRAMS OFFERED

- BS City & Regional Planning
  (Regular/Self Supporting Program)
- BS Disaster Management Program
  (Regular/Self Supporting Program)

FACULTY OF ENGINEERING & TECHNOLOGY

International Linkages:
- Prof. Dr. Tatsuro Sakano-Lab, School of Environment and Society, Tokyo Institute of Technology (TITECH), Japan.
- Prof. Dr. Hideharu Morishita-Lab, Department of Policy Studies, Aichi Gakuin University (AGU), Japan
- Prof. Dr. Takeshi Komai-Lab, Department of Environmental Studies, Graduate School of Environmental Studies, Tohoku University, Sendai, Japan
- Philippine School of Business Administration (PSBA), Manila, Philippines (Included in World Higher Education Database (WHED) and listed in United Nations Educational, Scientific and Cultural Organization's (UNESCO) and the International Association of Universities (IAU) i.e. IAU/UNESCO List)
- School of Urban and Regional Planning (SURP), University of the Philippines
- International Society of City and Regional Planners (ISoCaRP), Netherlands
- Prof. Dr. Dietwald Gruehn, Chair of Landscape Ecology and Landscape Planning School of Spatial Planning, TU Dortmund University, Dortmund, Germany

The agreements of exchange with above institutions include the activities in academic areas of mutual interest, on the basis of equality and reciprocity especially:
- Exchange of faculty, students, researchers and other research and administrative staff
- Collaborative research projects
- Lectures and symposia/video conferencing
- Exchange of academic information and materials
- Other forms of academic cooperation.
- Establishment of "Institute of Town Planning and Sustainable Development" at LCWU in future.

The Department has also initiated collaborative academic activities with the respective faculty/members of the following local and international institutions:
- National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan
- School of Spatial Planning, TU Dortmund University, Dortmund, Germany
- University of Western Sydney, Australia
- Asian Institute of Technology (AIT), Bangkok, Thailand
- United Nations Development Program (UNDP), Islamabad
- Federal Ministry of Climate Change, Islamabad
- Institute of City and Regional Planning, Japan
- SHARP-SOLAR, Japan
- National Disaster Management Authority (NDMA), Islamabad
- Provincial Disaster Management Authority (NDMA), Punjab
- UK Emergency Response Team, UK
- Rescue 1122
- Japan International Cooperation Agency (JICA), Islamabad
- UNHABITAT, Islamabad

Vision:
Contribute towards enhancing the quality of life and environment of diverse populations from varied human settlements through participatory, equitable and inclusive sustainable development

Mission:
- Impart knowledge and skills to produce empowered, creative, values driven and motivated City and Regional Planners capable of meeting the challenges of contemporary and future human settlements thereby adding to knowledge economy within local and global context.
- Develop ability to deal with the emerging planning problems and development issues at the urban and regional scales while considering ground realities.
- Inculcate skills of leadership, entrepreneurial creativity, cost benefit analysis, planning and spatial data analysis, equity, ethics, decision making, advocacy and public involvement.

- Equip the students with theoretical knowledge and field experience so that they can pursue career in planning and development sectors at national and international levels and promote sustainable development.

Learning Outcomes

The graduates of City and Regional Planning are associated with International Society of City and Regional Planners (ISoCaRP) for international exposure and professional practice at national and international level. Our graduates have secure career path with maximum employment opportunities at local, provincial and federal level in different ministries and departments as well as in international development agencies and private sector. The department also assists to arrange foreign funded scholarships and international training opportunities for brilliant and talented students for higher education abroad.

BS CRP

Program Eligibility Criteria

- F.Sc.(Pre Engineering)/ICS/General Science(Statistics, Math and Economics)
- Admission is based on Open Merit and Eligibility Criteria is minimum of 60% marks. Department may conduct its own entry test/interview if required. Entry Test of UET is acceptable, but it is not a compulsory requirement.

Duration: 4 years   **Total Credit Hours:** 133 CH (Th. 82 & Pr.51)

Bs disaster management

Learning Objectives/ Learning Outcomes

Following are the major objectives of the disaster management department that will be implemented at LCWU in the light of HEC approved curriculum:

- To inculcate the ability to apply knowledge of science to the solution of complex disaster problem
- Students must be able to design solutions for prevention, preparedness, mitigation and response to disaster situations.
- To know how to carry out vulnerability and risk assessments in a methodical way?
- To create, select and apply appropriate techniques, resources, and modern tools to complex disaster activities.
- To work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.
- To communicate effectively, orally as well as in writing on complex disaster management projects with the community and society at large.
- To demonstrate management skills and apply disaster management knowledge to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.
- To apply ethical principles and commit to professional ethics and responsibilities and norms of disaster management practices.

ELIGIBILITY CRITERIA

FSc (Pre Engineering and Pre Medical) or FA with Mathematics, Biology, Statistics, Computer Science, Geography, Economics and Commerce.

DURATION: 4-year programme spread over 8 semesters

DEGREE REQUIREMENT

Minimum of 124 CH

List of Faculty

- Prof. Dr. M. Atiq ur Rahman, Chairperson/Professor
- Ms. Attiya Haseeb, Assistant Professor (on study leave)

FACULTY OF ENGINEERING & TECHNOLOGY

- Ms. Siddiqa Amin, Assistant Professor
- Ms Maria Ali, Lecturer
- Hafiza Saba Islam, Lecturer
- Ms. Faryal Khalid, Lecturer
- Ms Arwa Tariq, Lecturer
- Ms. Iqra Ismail, Lecturer
- Ms. Amna Shoaib, Lecturer
- Ms. Kashmala Tahir, Lecturer
- Ms. Hania Arif, Lecturer
- Ms Atia Saleemi, GIS Analyst

List of Visiting Faculty

- Prof. Dr. Shaker Mahmood Mayo, (Chairman/ Professor, City and Regional Planning (CRP), UET, Lahore)
- Prof. Dr. Ijaz Ahmad, (Professor, City and Regional Planning (CRP), UET, Lahore)
- Syed Nadeem Akhter Zaidi, (Visiting Assistant Professor),Chief Town Planner Lahore Development Authority (LDA), M.Sc. Urban Design, University of Hong Kong
- Muhammad Nadeem, (Visiting Assistant Professor), M.Sc. Rural and Regional Development Planning, Asian Institute of Technology (AIT), Bangkok, Thailand.

List of Honorary Faculty (National)

- Prof.A.Sattar Sikandar, (Ex-Dean, Faculty of Architecture and Town Planning, University of Engineering and Technology (UET), Lahore)
- Prof. Dr. Qamar ul Islam, (Ex-Chairman, CRP Department, UET, Lahore/ APA Planning Ambassador USA)
- Plnr. Aslam Mughal, (Ex-President, Institute of Planners, IPP, Pakistan)
- Plnr. Waheed Ahmad Butt, Ex-Chief Metropolitan Planner (CMP), Lahore Development Authority (LDA), Lahore
- Plnr. Khalid Mahmood Sheikh, Ex-Chief Town Planner, Lahore Development Authority (LDA), Lahore
- Plnr.Mubashar Hussain, Manager-Disaster Risk Reduction (DRR), National Disaster Risk Management Fund (NDRMF), Islamabad
- Mr.Zia ul Haq, Ex-Regional Director, Pakistan Council of Research on Water Resources (PCRWR), Govt. of Pakistan.
- Brigadier (Retired) Syed Fiaz Hussain Shah,Senior Capacity Building Specialist (SCBS), National Institute of Disaster, Management (NIDM), Islamabad.
- Dr. Rizwan Naseer, (Sitara-e-Imtiaz), Founder Director General,Punjab Emergency Services (Rescue 1122)
- Nisar Sani, Project Director at the World Bank, Director Operations Provincial Disaster Management Authority, Govt. of the Punjab.
- Prof. Dr. Nasim H. Ansari, Ex-Chairman, Department of City and Regional Planning (CRP), University of Engineering and Technology (UET), Lahore

List of Honorary (Foreign)

(Lectures through Video conferencing)
- Prof. Dr. Tatsuro Sakano, Tokyo Institute of Technology (TITECH), Japan
- Prof. Dr. Hideharu Morishita, Aichi Gakuin University (AGU), Japan

FACULTY OF ENGINEERING & TECHNOLOGY

- Prof. Dr. Takeshi Komai, Tohoku University, Tohoku, Sendai, Japan
- Prof. Dr. Chihiro Inoue , Tohoku University, Tohoku, Sendai, Japan
- Prof. Dr. Shigemochi Hirashima, Professor Emeritus, Meiji-Gakuin University, Japan;

Visiting Senior Advisor,

Japan International Cooperation Agency (JICA).

- Shoji Hasegawa, Expert on Disaster Management at NDMA, Japan International Cooperation Agency (JICA), Islamabad
- Dr. Tabassam Raza, Associate Dean and Director of R&E, Planning and International Linkages (PIL), Philippine School of Business Administration (PSBA), Philippines
- Mr. Ricardo R. Abreu, Vice Dean, Undergraduate Studies, Philippine School of Business Administration (PSBA), Philippines
- Ms. Liwag Carmelita Rosario, School of Urban and Regional Planning (SURP), The University of Philippines, Manila
- Prof. Dr. Dietwald Gruehn, Chair of Landscape Ecology and Landscape Planning, Adjunct Professor MSU (USA), CNU (Korea), School of Spatial Planning, TU Dortmund University, Dortmund Germany.
- Dr. Shinji Tajima, Ex-JICA Advisor (for Govt. of Pakistan), Executive Director, International Center of Literacy and Culture (ICLC), Tokyo, Japan
- Prof. Dr. Mario R. Delos REYES, Dean, School of Urban and Regional Planning, University of the Philippines
- Dr. Awais Latif Paracha, New South Wales University, Australia

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DEPARTMENT OF COMPUTER SCIENCE
OVERVIEW

The history of the Department of Computer Science dates back to 1996 when it was started as a computer centre by the grant provided by Ministry of Social Work and Women Development. The Department started ICS classes in 1997 in addition to offering Short Courses and Diplomas. The Lab facilities were extended with the grant from Punjab Information Technology Board and started BCS classes in 1999. The Department started 4 year BSCS degree program in 2000 and expanded its facilities in 2001 with the funding provided by Higher Education Commission. MSCS degree program was introduced in 2002. The Department was shifted in its new building in 2005. The Department started PhD degree program in 2011. The Department expanded its infrastructure further with the construction of a new block funded by Ministry of Information Technology and Telecommunication in 2015 to offer students a nurturing innovative environment. BSCS and MSCS self-support evening degree programs were started in 2020. Currently, the Department is equipped with high speed internet of 400 MB bandwidth supported by fibre backbone, and video conferencing facility. There are a total of 05 Computer Labs. Departmental library has over 15000 books. Moreover, the Department has access to international journals and scholarly publications through HEC Digital Library.

LEARNING OBJECTIVES:
- The Department strives to produce highly skilled professionals who apply specialist skills and knowledge to everyday workplace situations. Besides having highly developed technical abilities, they are expected to carry out research and to keep their knowledge continually up-to-date. Most importantly, they are required to have excellent communication skills.
- To produce quality graduates equipped with a wide breadth of knowledge.
- To develop strong critical, analytical and logical thinking in the graduates
- To establish effective communication and interpersonal skills in the graduates
- To produce quality graduates equipped with a focused depth of a specialized domain of computing knowledge.
- To develop a strong and critical reasoning necessary for research.

OUTCOMES:
To set pace in the field of technology, the Department has designed several degree courses that provide balanced coverage of the various aspects of Computer Science. These programs are intended to produce graduates who have acquired:
- Depth and breadth of knowledge in computer science as evidenced by an understanding of computing systems and science coupled with the capacity to produce feasible and responsible solutions to complex computing problems.
- Literacy as evidenced by skills in writing, reading, speaking, and listening.
- Critical thinking as evidenced by skills in interpretation, analysis, evaluation, inference, argumentation, and reflection.
- Values as evidenced by the ability to make reasoned and ethical choices and to accept responsibility for them.

DEGREE PROGRAMS OFFERED

- BS Computer Science
  (Regular/ Self-Supporting Program)
- MS Computer Science
  (Regular/ Self-Supporting Program)
- PhD Computer Science

- Interpersonal skills as evidenced by leadership ability, appreciation for diversity, and the capacity to work effectively with others.
- Life-long learning skills as evidenced by the ability to adapt to innovation and change.
- The program will prepare such professional as to fulfill the need of industry
- The program will establish foundations for further learning and education
- The program will produce graduates with convincing capabilities

Eligibility Criteria for BS Computer Science:

Intermediate or equivalent with Mathematics subject with atleat 50% marks are eligible to apply for Bs Computer Science.Equivalence must be from IBCC.

Duration: 4 years   Credit Hours: 133 CH

MS Computer Science

The MS Computer Science is a two year Degree Program, comprising of 31 Credit Hours

Eligibility Criteria for MS Computer Science:

- BSCS (4 Years) or B. Sc. Computer Science (Hons.) (4 Years) or MCS or MIT or M. Sc. Computer Science or Equivalent. Equivalence must be from HEC.
- The candidate must have obtained 2.5/4.00 CGPA in semester or 50% marks in annual system.
- Entry Test (50% qualifying Marks) and interview organized by University in mandatory for admission
- Candidates working in Government/semi-government institutions have to submit NOC from concerned organization.
- All other requirement as per University policy (Please see University criteria for MS)

Specialization / Elective Courses:

May be offered subject to availability of regular resource person and fulfillment of minimum class size requirements

- Advanced Image Processing (CS-505)
- Advanced Computer Vision (CS-506)
- Machine Learning (CS-507)
- Advanced Computer Networks (CS-508)
- Advanced Network Security (CS-509)
- Wireless and Mobile Computing Networks (CS-510)
- Software Quality Assurance (CS-511)
- Requirement Engineering (CS-512)
- Software Design (CS-513)
- Software Architecture (CS-514)
- Decision Support Technologies (CS-515)
- Internet of Things (CS-516)
- Deep Learning (CS-517)
- Agile Software Development (CS-518)
- Agent Based Modeling (CS-519)
- Complex Network (CS-520)
- Component Based Software Engineering (CS-521)
- Human Computer Interaction (CS-522)

PhD Computer Science:

Eligibility Criteria

- Minimum CGPA 3.0 (out of 4.0 in the Semester System) or 1st Division (in the Annual System) in MS / M.Phil/ Equivalent degree in Computer Science. Equivalence must be from HEC.

  The candidate must have 3.00/4.00 CGPA in semester or first division in Annual system.
- Entry Test (70% qualifying Marks) and interview organized by University in mandatory for admission to Ph.D. Program.
- All other requirement as per University Policy (Please See University admission Eligibility Criteria for Ph.D.)
- Admission in Ph.D. program will be carried out twice a year, in spring and in Fall depending on the availability of seats.

FACULTY OF ENGINEERING & TECHNOLOGY

Specialization / Elective Courses:

May be offered subject to availability of regular resource person and fulfillment of minimum class size requirements

- 3D Modeling and Reconstruction (CS-701)
- Image Compression and Rendering (CS-702)
- Pattern Recognition (CS-703)
- Geographical and Satellite Imaging (CS-704)
- Digital Video Processing (CS-705)
- Computer Visualization and Animation (CS-706)
- Game Theory (CS-707)
- Nano Communication Networks (CS-708)
- Optimization Techniques (CS-709)
- Smart Grid (CS-710)
- Data Collection and Analysis Techniques (CS-711)
- Data Warehousing & Data Mining (CS-712)
- Knowledge Management and Information Retrieval (CS-713)
- Advance Requirement Engineering (CS-714)
- Agents based Software Engineering (CS-715)
- Architectures for Software Systems (CS-716)
- Evidence Based Software Engineering (CS-717)
- Service Oriented Computing (CS-718)
- Software Engineering Economics (CS-719)
- Stochastic Processes (CS-720)
- Big Data Analytics (CS-721)

List of Faculty

- Dr. Muhammad Abuzar Fahiem, Professor , Ph.D. , (UET) Lahore
- Dr. Nadia Kanwal, Associate Professor, Ph.D. , University of Essex, UK, (Leave)
- Dr. Saima Farhan, Associate Professor & Chairperson of Department, Ph.D. (LCWU), Lahore
- Dr. Huma Tauseef, Associate Professor, Ph.D. , (LCWU), Lahore
- Dr. Mariam Nosheen, Assistant Professor, Ph.D. ,(LCWU), Lahore
- Dr. Ayesha Iqbal, Assistant Professor, Ph.D. ,(LCWU), Lahore
- Dr. Maria Saleemi, Assistant Professor, Ph.D. ,(LCWU), Lahore
- Dr. Komal Bashir, Assistant Professor, Ph.D. , (LCWU), Lahore
- Ms. Humaira Kauser, Assistant Professor, MS, (LCWU), Lahore
- Dr. Faria Kanwal, Assistant Professor, Ph.D. , (LCWU), Lahore
- Dr. Maria Anjum, Assistant Professor, Ph.D. , (Durham University), UK
- Dr. Fahima Tahir, Assistant Professor, Ph.D. , (LCWU), Lahore
- Dr. Ayesha Afzaal, Assistant Professor, Ph.D. , (LCWU), Lahore
- Dr. Fatima Anjum, Assistant Professor, PhD, (LCWU), Lahore
- Dr. Usman Ahmad, Assistant Professor, Ph.D. ,Uniriti Teknologi, Malaysia
- Ms. Sidra Rafique, Lecturer, MS, (GCU), Lahore
- Dr. Rabia Javed, Lecturer, PhD, (UTM), Malaysia
- Ms. Khansa Atif, Lecturer, MS, (LCWU), Lahore

FACULTY OF ENGINEERING & TECHNOLOGY

Support Staff

- **Ms. Wajeeha Malik,** Computer Instructor, MS, (LCWU), Lahore
- **Ms. Ambreen Amna,** Computer Instructor, MS, (LCWU), Lahore
- **Ms. Attia Anis,** Computer Instructor, MS, (LCWU), Lahore

Technical Staff

- **Mr. Muhammad Javed Iqbal,** Assistant Data Processor

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DEPARTMENT OF ELECTRICAL ENGINEERING

OVERVIEW

Department of Electrical Engineering (DEE) at Lahore College for Women is providing quality education to produce qualified female engineers who can address the modern challenges and excel at national and international level. The department has successfully obtained accreditation from Pakistan Engineering Council (PEC) from first batch starting in 2004-2008 till 2018-2022. DEE has implemented the Outcome Based Education (OBE) system in fall 2018 as per the requirement of Pakistan Engineering Council. Current strength is about 200 students who are pursuing bachelor's degree in Electrical Engineering. Since 2013, MS Electrical Engineering has been started and running successfully. Our graduates are working in the National and International Organization successfully. Many are providing their services in Telecommunication, Electronics, Academics, Management and Power Sector.

DEE has implemented the Outcome Based Education (OBE) system in Fall 2018 as per the requirement of Pakistan Engineering Council (PEC) and successfully obtained PEC accreditation at Level II for consecutive two years for outgoing batches 2021 and 2022. The degree of B.E. Electrical at DEE, LCWU is equally recognized in 25+ countries in the world.

MISSION:

To be one of the leading programs of Electrical Engineering education, research and innovation that produces quality female graduates who are capable of taking leadership positions in broader aspects of Electrical Engineering and can exhibit excellence in academia, industry, technology, economics and social enrichment of community at large.

Program Educational Objectives (PEOs)

The educational Objectives are to prepare graduates through a continued learning process for the broad range of opportunities available in industrial, commercial and academic organizations. The Program Educational Objectives are:

Table 1. Program Educational Objectives for DEE

PEO1 Professionals – Acquire learning concepts, techniques, skills and tools for analyzing and designing electrical engineering systems.

PEO2 Problem solvers –Enhancement of professional skills through formal education which enables problem solving at industrial level and a sharpened ability to successfully pursue graduate study and research.

PEO3 Team Players – An ability to work independently as well as collaboratively with others, and to have demonstrated leadership, accountability and initiative responsibility.

PEO4 Intellectuals - A commitment to ethics, social and environmental responsibility, lifelong learning attitude with efficiency and effectiveness.

Program Learning Outcomes

The following are the Program Learning outcomes of the DEE opted from Pakistan Engineering Council.

Table 2. Program Learning Outcomes for DEE

PLO1 Engineering Knowledge: An ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

DEGREE PROGRAMS OFFERED

- Bachelors in Electrical Engineering (BEE)
- Masters in Electrical Engineering (MSEE)

PLO2 Problem Analysis: An ability to identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

PLO3 Design/Development of Solutions: An ability to design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

PLO4 Investigation: An ability to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis and interpretation of experimental data, and synthesis of information to derive valid conclusions.

PLO5 Modern Tool Usage: An ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.

PLO6 The Engineer and Society: An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solution to complex engineering problems.

PLO7 Environment and Sustainability: An ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.

PLO8 Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

PLO9 Individual and Team Work: An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.

PLO10 Communication: An ability to communicate effectively, orally as well as in writing, on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions

PLO11 Project Management: An ability to demonstrate management skills and apply engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.

PLO12 Lifelong Learning: An ability to recognize importance of, and pursue lifelong learning in the broader context of innovation and technological developments.

Eligibility Criteria for the degree program B.E. Electrical

Weightage of recent Entry Test conducted by UET (Math,Physics,Chemistry)	33%
Intermediate (Pre-Engineering)/A-Level/DAE(Electronics/Electrical)	50%
Matriculation	17%
	100%

- There will be open competition amongst the F.SC/ A-Level and DAE (Electronics/Electrical) holders.

Note: UET Entry Test Result for the year 2022 must be attached with the submitted form. Admission will be made on open merit (Punjab domicile). Reserved seats will be included as per university criteria.

Eligibility criteria for the degree program MS-EE

- 16 years of education in Electrical/Electronic Engineering (securing a minimum of 60% marks / CGPA of 2.5/4.00)
- Candidate must have valid PEC registration number.
- The candidate must have obtained 2.5/4.00 CGPA in semester or 50% marks in annual system.
- Entry Test (50% qualifying Marks) and interview organized by University in mandatory for admission
- Candidates working in Government/semi-government institutions have to submit NOC from concerned organization.
- All other requirement as per University policy (Please see University criteria for MS)

DURATION: 2 Years   **Total Credit Hours: 30 CH**

FACULTY OF ENGINEERING & TECHNOLOGY

List of Specialized Courses
- Electronic Circuit Design (Breadth Core I)
- Instrumentation and Measurements
- Microelectronics Technology
- VLSI Design
- Digital System Design
- Digital Signal Processing
- Solid State Devices
- RF and Microwave Engineering
- Data Communication
- Power Electronics (Breadth Core II)
- Integrated Electronics
- Optoelectronics
- Industrial Electronics
- Introduction to Nanotechnology
- Wave Propagation and Antenna
- Digital Control Systems
- Biomedical Instrumentation
- Medical Robotics

List of Faculty
- Prof. Dr. Intesar Ahmed, Professor, Dean, Faculty of Engineering and Technology , Ph.D. (Adelaide University, Australia)
- Dr. Sadia Murawwat, Chairperson of the Department, Associate Professor, Ph.D. (Beijing Institute of Technology, P.R. China)
- Dr. Aqsa Shabbir, Associate Professor , Ph.D. (Ghent University, Belgium & LMU Munich, Germany)
- Mr. Sajjad Rabbani, Assistant Professor, Ph.D. (UCP, Lahore (Cont.)
- Dr. Marium Jalal, Assistant Professor, Ph.D. (University of L'Aquila, Italy)
- Ms. Nausheen Bilal, Assistant Professor , Ph.D. (NUST, Islamabad (Cont.)
- Dr. Taskeen Raza, Assistant Professor (TTS), Ph.D. (PIEAS, Islamabad
- Mr. Umar Rana, Lecturer, B.Sc (UOL, Lahore)
- Ms. Ahlam Jameel, Lecturer, Ph.D. (UCP, Lahore) (Cont.)
- Ms. Faiza Iftikhar, Lecturer, Ph.D. (LUMS, Lahore) (Cont.)
- Ms. Ismat Hira, Lecturer, MS (UET, Lahore)
- Ms. Asima Kiran, Lecturer, MS (LUMS, Lahore)
- Ms. Fatima Qazi, Lecturer, MS (UET, Lahore)
- Ms. Aisha Jilani, Lecturer , MS (LCWU)
- Ms. Ayesha Tariq, Lab Engineer, MS (LCWU)
- Ms. Rimsha Musharraf, Lab Engineer, MS (UMT, Lahore) (Cont.)

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DEPARTMENT OF SOFTWARE ENGINEERING

OVERVIEW

Software plays a central role in almost all aspects of daily life including communications, government, manufacturing, banking and finance, education, transportation, entertainment, medicine, agriculture, and law. The number, size, and application domains of computer programs have grown dramatically. As a result, huge investments are being spent on software development industry. Software products help us to be more efficient and productive. They provide information, make us more effective problem solvers, and provide us with safer, more flexible, and less confining work, entertainment, and recreation environments.

Software Engineering is the application of a systematic, disciplined and quantifiable approach to the design, development, operation, and maintenance of software systems. It is in fact the practice of designing and implementing large, reliable, efficient and economical software by applying the principles and practices of engineering. The department aims to train students in all aspects of the software life cycle from specification through analysis and design to testing, maintenance and evolution of software products. The Department of Software Engineering is committed to producing highly qualified female software engineers with strong analytical and development skills to deal with the recent challenges in real life and play an effective role in the development of the information technology sector.

VISION:

The vision of Department of Software Engineering, Lahore College for Women University Lahore is to empower the females by making them technically strong in the various disciplines of Software Engineering, so that they could contribute effectively and efficiently towards the nation and the society with their state-of-the-art ideas, up-to-date research, entrepreneurship, leadership and a vigorous positive learning attitude.

Mission:

The mission of the Department of Software Engineering, Lahore College for Women University Lahore is to excel in the field of software engineering by making significant research contributions and software development activities to international standards to recognize the department at various levels. The department is also very keen to provide an opportunity to female students to get knowledge of freelancing and start their own IT businesses.

LEARNING OBJECTIVES:

The Department of Software Engineering at Lahore College for Women University Lahore is committed to empowering women and giving them an opportunity to become highly professional software engineers who can cope with modern challenges by providing them with an excellent learning and research environment. The faculty of the Department of Software Engineering graduated from renowned national and foreign universities. They are all experts in various core areas of software engineering and leave no stone unturned to empower software engineering students to cope with the current challenges of the software industry. The experience of the faculty members in software development and their linkage in various industries will also play an important part in grooming the capabilities and morale of female students according to the recent trends of the software market.

OUTCOMES

Program Learning Outcomes (PLOs)   Software Professional Graduate
- Academic Education: To prepare graduates as software professionals.

DEGREE PROGRAMS OFFERED

- **Bachelor of Science in Software Engineering (BSSE)**

- Knowledge for Solving Software Problems: Apply knowledge of software fundamentals,knowledge of a software specialization, and mathematics, engineering, and domain knowledge appropriate for the software specialization to the abstraction and conceptualization of software models from defined problems and requirements
- Problem Analysis: Identify, formulate, research literature, and solve complex software problems reaching ubstantiated conclusions using fundamental principles of mathematics, software engineering, and relevant domain disciplines.
- Design/Development of Solutions: Design and evaluate solutions for complex software problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations
- Modern Tool Usage: Create, select, adapt and apply appropriate techniques, resources, and modern software tools to complex software activities, with an understanding of the limitations
- Individual & Team Work: Function effectively as an individual and as a member or leader in diverse teams and in multi-disciplinary settings
- Communication: Communicate effectively with the software community and with society at large about complex software activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions
- Software Professionalism & Society: Understand and assess societal, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional software practice
- Ethics: Understand and commit to professional ethics, responsibilities, and norms of professional software practice
- Life-long Learning: Recognize the need, and have the ability, to engage in independent learning for continual development as a software professional

Bs Software Engineering:
Eligibility Criteria:
The minimum requirements for admission in a Bachelor degree program in Software Engineering, is at least 50% marks in Intermediate (HSSC) examination with Mathematics or equivalent qualification with Mathematics certified by IBCC.
PROGRAM DURATION: 4 YEARS (8 Semesters)   TOTAL CREDIT HOURS: 130 CH

List of Faculty:
- Dr. Muhammad Mohsin Nazir, Chairperson, Associate Professor, PHD (AIT, Thailand)
- Ms. Ayesha Rafiq, Lecturer, MS Software Engineering Bahria University (Islamabad)
- Ms. Aasma Akram, Lecturer, MS Computer Science NCBA&E (Lahore)

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