

# Bushra Fatima

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## **OBJECTIVE**

Looking for a position as a lecturer, where I can utilize my teaching skills to instil passion of learning into the students alongside the aspiration of building upon my research interest.

## **WORK EXPERIENCE**

### **Lecturer– February 2017 to date**

NED University of Engineering and Technology

Courses taught:

- Fall 2017-18: Internal Combustion Engines and Engineering Drawing
- Spring 2016-17: Internal Combustion Engines
- Fall 2016-17: Computer Programming and Applications

### **Teaching Assistant – September 2014-August 2016**

Middle East Technical University

Northern Cyprus Campus, Mersin 10, Turkey.

Courses assisted:

- Fall 2014-15: Statics, Manufacturing Engineering
- Spring 2014-15: Introduction to Finite Element Analysis, Control Systems
- Fall 2015-16: Statics, Manufacturing Engineering
- Spring 2015-16: Dynamics, Control Systems

Laboratories assisted:

- Engineering measurements: Temperature, pressure and strain measurements
- Vibration and Control systems
- Active hot water solar collector performance
- Material Testing: Determining material properties using tensile test with the help of strain gages.

Responsibilities:

- Conducting laboratory sessions for undergraduate mechanical engineering students.
- Grading laboratory reports.
- Preparing and grading weekly homework and quizzes.
- Recitation hours for assignments
- Proctorships during Mid and final examinations.

### **Mechanical Design Engineer – December 2013-September 2014**

SEM Engineers

Karachi, Pakistan.

Responsibilities:

- Heating and cooling load calculations using the software Hourly Analysis Program 4.5
- Static pressure calculations
- Schedule making for Air-conditioning Units; Modular Air Handler Units, Fresh Air Handling Units, Split systems, Ducted Fan Coil Units, Fan Coil Units, Energy Recovery Wheels, Water Cooled Packaged Units.
- Schedule making for Ventilation fans including Fresh air, Exhaust air and Jet Air Fans.
- Schedule making for Chiller, Pumps and Cooling tower
- Stairwell Pressurization Calculation
- Duct and Pipe Sizing
- Schematic diagrams for; chilled water systems, chilled water system with ice storage banks and hot water system using boilers.
- Pump head calculation
- Laying out Supply Air, Fresh Air, Exhaust Air ducts from unit and Heat Recovery Ventilators
- Placing indoor and outdoor units (where appropriate) for DX and hydronic systems.

- Laying out refrigerant, chilled water, cooling water and drainage piping on the architectural plans

## **EDUCATION**

### **MS in Sustainable Environment and Energy Systems – September 2014 – August 2016.**

Middle East Technical University  
Northern Cyprus Campus, Mersin 10, Turkey.

- Thesis Title: Modelling and Analysis of Multi-Walled Carbon Nanotube Reinforced Polymer Composites
- CGPa: 3.79/4.0

### **BE in Mechanical Engineering – January 2010 – December 2013.**

NED University of Engineering and Technology

- Thesis Title: Design and Fabrication of micro Horizontal Axis Wind Turbine.
- Percentage: 84.15 %, among Top 10.

### **A'Levels, August 2007 – June 2009**

The City School  
Gulshan Campus, Karachi.  
4 A's

### **O'Levels, August 2005 – June 2007**

The City School  
Gulshan Girls Campus, Karachi.  
7A's, 2 B's

## **INTERNSHIPS**

### **Unilever Pakistan Limited – May 2012 – July 2012.**

Research and Development

Responsibilities: Prepared a report compiling the materials used for the packaging of personal wash and laundry products and recommended the developments that could be done.

### **Siemens Pakistan – December 2011 – January 2012.**

Energy Transmission Unit

Responsibilities: Visited switchboard, transformer and steel fabrication workshops and a Grid station at Defence. As an internship project, compiled a report on the processes being carried out.

## **COMPUTER SKILLS AND SOFTWARE**

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|--------------------|----------------------------------|
| ▪ HAP software 4.5 | ▪ Autodesk Inventor Professional |
| ▪ MS Excel         | ▪ Pro Engineer                   |
| ▪ MS Word          | ▪ ANSYS                          |
| ▪ MATLAB           | ▪ Marc Mentat 2013               |
| ▪ AutoCAD          |                                  |

## **SOCIAL SKILLS AND COMPETENCES**

- Hosted the annual Spring Festival and Egg drop competition held at NED University, 2013
- Participated in Design, Build and Fly Competition DBFC held at GIKI, 2013
- Participated in the Green Idea Challenge organized by ASHRAE, GIKI student chapter and qualified for the final round, March 2012
- Won the best poster design for Rocket Competition organized by student chapter of Society of Manufacturing Engineers (SME), 2011
- Hosted the Technical Paper Contest organized by ASHRAE, NED student chapter, 2011
- Participated in the Essay Competition organized by student chapter of Society of Manufacturing Engineers (SME), 2011
- Attended the NED Energy Recycle Drive workshop organized by student chapter of Society of Polymer and Petrochemical Engineers (SPPE), 2011
- Attended the Tiger training session organized by ASHRAE, NED chapter, 2011
- Participated in IBA pehchaan held at Liaquat National Hospital Auditorium, 2010
- Voluntary work at Sindh Institute of Urology and Transplantation, 2009
- Participated in International Kangaroo Mathematics Contest, 2008
- Participated in Mathematics Grandeur 2004 and secured 1st position, 2004
- Member of Prefectorial Council, 2001-2002

## **HONORS AND AWARDS**

- Best paper award at Mechanical Engineering Conference held at IEP March 2017
- Middle East Technical University NCC- Graduate Scholarship 2014-2016
- Allied Engineering Scholarship on the basis of merit during T.E. Engineering (2012)
- High Achievers Shield for outstanding performance in A level and O level
- Silver and Bronze Medals in expeditions organized by Duke of Edinburgh's Programme.