



Who Should Attend ?
Individuals &
Researchers from

PITAD

FBS

SBP

Ministries

Planning Division

Development Sector

Health Sector

HEC & Universities

Autonomous Bodies

Private Sector

Applied Quantitative Research Techniques

Venue: Pakistan Institute of Trade And Development (PITAD)
State Life building No. 07, Jinnah Avenue, Islamabad

About PSET

PITAD School of Economics and Trade (PSET) has been recently established as an independent entity of PITAD, with the aim to contribute significantly in the areas of Economics and International Trade.

PSET objective is to play an intellectual role in executing Post Graduate Diploma, Masters, MS, MPhil and PhD Programmes in Economics and International Trade for the individuals and researchers with educational background of economics, social and management sciences.

The theme behind PSET is to tackle the complexities of world's market place and provide an overview to government organisations, corporations and institutions on the globalised economy and trade, through its comprehensive academic programmes. In the beginning phase, it is launching Postgraduate Diploma in Applied Quantitative Research Techniques for the individuals and researchers. Next to this, MS, MPhil and PhD Programmes are in the queue. PSET with its distinguished local and foreign qualified faculty and dynamic researchers, will execute its programmes successfully.

Outcomes of the PGD

Report Generation

OLAP
Case Summaries in Rows & Columns

Cross Tabulation

Data Classification
Chi-Squares
Correlations
Nominal and Ordinal Symmetric Measures

Descriptive Statistics

Frequency Distribution
Measure of Central Tendency
Measure of Dispersion
Measure of Distribution

Measure of Association

Pearson Correlation
Spearman Correlation
Kendall Tau 'b'
Correlation Matrix

Measure of Mean Differences (Parametric Tests)

T-test for One Sample
T-test for Independent Samples
T-test for Dependent Samples
Anova
Anova Extensions
Tukey Test

Bonferroni Test

Linear Regression

Interpretation of Regression Equation and the Value of 'F' and 'T' Statistics
R Value
R-Square and Adjusted R-Square Values
Goodness of Fit
Multi-Collinearity
Interpretation of Eigen and Conditional index Values
Degree of Freedom and its role in Regression Equation
Un-Standardised and Standardised Regression Coefficients

Binary and Logistic Regression

Classification Plots
Hosmer-Lemeshow Goodness of Fit Test
Numerical Problems in Logistic Regression
Computation of by Chance Accuracy

Data Classification

Two Step Clustering
K-Means Cluster
Hierarchical Cluster
Tree Clustering
Discriminant Analysis

Factor Analysis

Principal Component Method
Correspondence Analysis
Reliability Analysis

Non-Parametric Test

Chi Square Test
Binomial Test
Run Test
K-S Test
Mann-Whitney U Test
Wilcoxon W Test
Wilcoxon Rank Sum Test
Kruskal Wallis Test
Friedman ANOVA

Structural Equation Modeling

Introduction to SEM
Introduction to Latent and Observed Variables
Introduction to Structure and Path Diagram

Stationary Time Series Models

ARMA Models
ADF Unit Root and Stationarity
Auto-Correlation Function
Partial Auto-Correlation Function
Box Jenkins Model Selection
Properties of Forecast
Seasonality

Modeling Volatility

ARCH Model
GARCH Model
ARCH-M Models
Maximum Likelihood Method
Estimation of GARCH Models
Other Models of Conditional Variance

Models with Trend

Deterministic and Stochastic Trends
Removing the Trend
Unit Root and Regression Residuals
Dickey Fuller Test
Structural Change
Panel Unit Root Test

Multi-Equation Time Series Models

Transfer Function Models
Estimating a Transfer Function Models
VAR Model
Impulse Response Functions

Cointegration and Error Correction Models

Co-integration and Error Correction
Testing of Co-integration
Engle-Granger Method
Johansen Method
General to Specific Modeling

Methodology

In building up the knowledge base, PITAD has affirmed its effort to start with QRT-Basic and provide an excellent opportunity to the researchers to know the validity and volatility of the early indicators given by statistical offices to monitor the business cycle and to foster evidence based decisions of government organisations and business enterprises. As for quantitative research, it is imperative to know the pre-conditions, the limitations, the concepts and methods as well as the international standards to produce the official statistics, such as National Accounts, Balance of Payments, Price Indices, Government Financial Statistics and Monetary Statistics.

In QRT-One, SPSS will be used as Quantitative Research Tool. This course will include the concepts of report generation, descriptive statistics, measures of mean differences, measures of association and regression analysis, factor analysis, reliability analysis, non-parametric tests and structural equation modeling.

QRT-Two is composed of Time Series Data Analysis using Eviews software. It will cover the selected contents of time series robustness, assumptions and verification of time series validity through ADF test and DW test, modeling volatility by incorporating ARCH, GARCH, EGARCH, TAR and TGARCH models on trade and macro-economic data, multi-equation time series analysis and long & short-term relationships of time series through applications of OLS, GLS, Co-integration, Granger Bi-Causality and Error Correction Methods.

QRT-Three will offer Quantitative Research Techniques for Trade and International Finance. It will be very focused and advanced certificate course, covering all methodological issues in domestic and international commerce. Specifically, this certification will cover the quantification of commercial policies, application of social accounting matrices, trade-focused general equilibrium models, multi-region trade modeling, scale economies and imperfect competition, capital accumulation in trade models and trade wars, negotiations and applied game theory.

Results

The comprehensive and focused contents of PGD will overcome all the methodological deficiencies of all the stakeholders (required for subsequent research work), enabling them to offer their expertise for all types of quantitative applications on repetitive basis. It will also enable other stakeholders to enhance their research capabilities to the expert level, after getting practical training in more current quantitative tools.

PGD Schedule

The program will be commenced twice a year. The duration of the diploma course will be 20 weeks and each course will be taught once in a week, in a class session of 03 hours (3:30 pm to 6:30 pm).

Applied Quantitative Research Techniques

Quantitative Research Techniques - Basic

Essential Statistics for Business and Management Research

- An Introduction to Official Statistics: A General Overview
- Preparing and Conducting Censuses / Surveys
- Sample Design, Sampling Techniques
- Designing Questionnaires
- Information Technology with regard to Data Processing, Data Management and Data Storage
- Index Theory and Index Calculation
- Data Dissemination
- Official Statistics in Pakistan, International Concepts and Requirements

Quantitative Research Techniques - One

Quantitative Techniques for Business and Management Research

- Introduction to Social and Management Sciences Research
- Exploratory Research Design
- Data Collection and Survey Design
- Sampling Design and Scaling
- Data Preparation and Preliminary Data Analysis
- Report Generation and Presentation
- Inferential Statistics and Application
- Correlation and Regression in Social and Management Sciences
- Analysing Data Reliability and Validity through different Techniques
- Non-Parametric Tests

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Web: www.pitad.org.pk

Quantitative Research Techniques - Two

Modeling Economic and Financial Time Series

- Stationary of Time Series
- Modeling Volatility
- Multi-equation Time Series Analysis
- Long and Short Term Relationships of Time Series
- Models with Trend
- Panel Data Analysis

Quantitative Research Techniques - Three

Modeling International Trade

- Quantification of Commercial Policies
- Application of Social Accounting Matrices
- Partial Equilibrium Models in Production and Trade
- Trade-focused General Equilibrium Models
- Multi-region Trade Modeling
- Scale Economies and Imperfect Competition
- Capital Accumulation in Trade Models
- Trade Wars, Trade Negotiations and Applied Game Theory

Objectives

Capacity building is an ongoing process for the individuals and organisations to identify and meet the developmental challenges in a most effective way. Expertise in Quantitative Research Techniques is most vital for R&D in the fields of economics, commercial & trade policy, management & social sciences. Much quantitative skills and techniques are required in carrying out Business and Management Research, Economics & Financial Modeling and International Trade Modeling have led PITAD to come up with this initiative of Postgraduate Diploma (PGD) in Applied Quantitative Research Techniques. This aims at helping the researchers and decision makers to improve their quantitative skills to produce high quality research publications at local and international level.

PGD program is composed of Four (04) courses, QRT-Basic (Essential Statistics for Business and Management Research), QRT-1(Quantitative Techniques for Business and Management Research), QRT-2 (Modeling Economic and Financial Time Series) and QRT-3 (Modeling International Trade).

The main objective of PGD is to carry out methodological research work smoothly and exercise it on repetitive basis, aiming to bridge the gap between research and practice, and contribute to evidence based practice in the areas of commercial & trade policy, economics, management and social sciences. PITAD is committed to build an overall research capacity of human resource working in various organisations. The program is designed to develop and enhance the tailor-made techniques urgently required for research work and a comprehensive set of tools for future research endeavors.

Diploma will be awarded to those participants, who will be able to successfully complete four courses. In case, at the completion of diploma, those who will not be able to fulfill the requirements of PGD, will be awarded with the certificates.

FACULTY



Bernard Struck



Alexander Richter



Dr. Iteaz Ahmed
Quaid-i-Azam University



Dr. Sajjad Akhtar
PITAD



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Registration form

Yes, please register me for **Applied Quantitative Research Techniques**

Delegate details

Surname _____ Mr/Mrs/Ms

First name _____

Position _____ Department/Company _____

Qualification (final degree) _____ Grade/CGPA _____

Course(s) interested for _____

Address _____

Telephone _____ Fax _____

Email _____

I have read and understood the booking terms and conditions

Signature _____ Date _____

Courses	Fee (in Rs)
Quantative Research Techniques-Basic	15000/-
Quantative Research Techniques-One	15000/-
Quantative Research Techniques-Two	15000/-
Quantative Research Techniques-Three	15000/-
Complete Postgraduate Diploma	50,000/-

Special Discounts for Institutions / Organisations

Payment details (please tick as appropriate)

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- Cheque
- Demand Draft
- Pay Order