CEMLA Course: Financial Econometrics

PROGRAM

July 21 - 25, 2025 — Digital (Mexico City time, UTC -6)

Course Format:
The presentation slides will be in English, but the course will be conducted in Spanish, with simultaneous interpretation. Videoconferences will take place using the Zoom platform. The Course is aimed at analysts, junior researchers, and mid-level officials in economic research, financial stability, risk management, or related areas from CEMLA membership.

JULY 21 2025

09:00-10:30 hrs. SESSION 1. Estimation Methods
Ordinary Least Squares (OLS). Newton-Raphson method. Maximum Likelihood Estimation (MLE). Generalized Method of Moments (GMM).

10:30-11:00 hrs. Break

11:00-12:30 hrs. SESSION 2. Time Series Models
Autoregressive models (AR). Stationarity and seasonality. Vector Autoregression Models (VAR) in reduced and structural form: estimation and identification. Local Projections (LP).

12:30 hrs. Day ends

JULY 22 2025

09:00-10:30 hrs. SESSION 3. Expected Returns on Currencies
Expected returns on foreign exchange. Uncovered Interest Parity (UIP). Evidence of the UIP condition. Forward rate. Carry trade.

10:30-11:00 hrs. Break

11:00-12:30 hrs. SESSION 4: Interest Rate Models
Nominal term structure models. Decomposing the zero-coupon interest rate to expected inflation and to risk neutral. Real term structure model.

12:30 hrs. Day ends

JULY 23 2025

09:00-10:30 hrs. **SESSION 5. Asset Pricing Models**
Capital Asset Pricing Model (CAPM). Time varying model. Linear factor model. Multifactor pricing model.

10:30-11:00 hrs. **Break**

11:00-12:30 hrs. **SESSION 6. Volatility Models**
Volatility measures. Implied volatility from options prices. ARCH models. GARCH models. Stochastic volatility models.

12:30 hrs. **Day ends**

JULY 24 2025

09:00-10:30 hrs. **SESSION 7. Non-Parametric Models**
Review of estimation methods (binned means, kernel and series). Estimation of the yield curve. Kernel densities.

10:30-11:00 hrs. **Break**

11:00-12:30 hrs. **SESSION 8. Value at Risk and Quantile Regressions**
Value at Risk (VaR) estimation methods. Quantile regression estimation. Application of quantile regression and VaR.

12:30 hrs. **Day ends**

JULY 25 2025

09:00-10:30 hrs. **SESSION 9. Non-Linear Models**
Threshold Autoregressive Models (TAR) in time series: estimation, inference, and testing for non-linearity.

10:30-11:00 hrs. **Break**

11:00-12:30 hrs. **SESSION 10. Application to Financial Frictions**
Models with three regimes and one threshold variable. Models with two threshold variables. Application to investment and financial constraints.

12:30 hrs. **Day and course end**