

## School of Economics Applied Economics Simulation Lab (AESL)

The **Applied Economics Simulation Lab (AESL)** is a flagship, future-ready initiative of the School of Economics that redefines undergraduate economics education through **experiential learning, simulations, and data-driven applications.**

Designed to bridge the gap between **economic theory and real-world practice**, AESL transforms classrooms into **interactive economic environments** where students learn by *doing*, not just by listening.

### Why AESL?

Traditional economics education is often theoretical. AESL changes this by immersing students in **market simulations, policy games, financial trading, sustainability models, and real data analysis**, preparing them for careers in industry, research, public policy, and sustainability roles.

AESL positions **KCLAS as a pioneer in Applied Economics education in Tamil Nadu**, inspired by global teaching models followed by **Harvard, MIT, LSE, Oxford, and Stanford.**

### How AESL works

**1. Simulation-Based Learning** Students understand economics by participating in markets, budgets, policy games, finance simulations, and environmental models.

- Supply–demand price game
- Online auction simulation
- Monopoly Trade game
- Oligopoly price wars (Bertrand/Cournot games)

**2. Public Policy Experiments:** Students compare policy impact on households, firms, and government.

Simulate:

- GST rate changes
- Minimum wage policy
- Subsidy changes
- Pollution permits
- MPC Mock debates

**C. Behavioural Economics Experiments:** Shows real human behaviour vs economic theory.

Run games like:

- Prisoner's dilemma

- Ultimatum game
- Public goods game
- Nudge experiments

**D. Data Analytics:** Using Excel, R, Python, Tableau, Power BI or simple online tools.

Students analyse:

- Inflation trends of India
- GDP forecasting
- Budget analysis
- Unemployment data

**E. Business/Startup Simulations:** Teams run a “virtual company”:

- Pricing decisions
- Marketing budgets
- Cost analysis
- Competition
- SWOC

### 3-Year Applied Economics Simulation Lab (AESL) – Tabular Structure

Sem	Lab Theme	Objectives	Student Activities	Software / Tech Skills	Measurable Outcomes
Sem 1	<b>Markets &amp; Consumer Behaviour Simulation Lab</b>	<ul style="list-style-type: none"> <li>- Introduce market functioning through simulations</li> <li>- Build intuition on consumer choice &amp; pricing</li> <li>- Develop basic data literacy</li> </ul>	<ul style="list-style-type: none"> <li>- Market Day trading game</li> <li>- Behavioural experiments (anchoring, biases)</li> <li>- Budget allocation challenge</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Excel (Basic):</b> data entry, charts</li> <li>- <b>Google Forms:</b> survey creation</li> <li>- <b>Padlet/Miro</b> for collaboration</li> </ul>	<ul style="list-style-type: none"> <li>-Create demand-supply charts in Excel</li> <li>-Conduct and analyse a small survey</li> <li>-Explain market outcomes using simulation data</li> </ul>
Sem 2	<b>Macroeconomic Simulation Lab</b>	<ul style="list-style-type: none"> <li>- Build macroeconomic understanding through economic models</li> </ul>	<ul style="list-style-type: none"> <li>- Central Bank interest rate simulation</li> <li>- Fiscal policy budgeting game</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Excel (Intermediate):</b> time-series, forecasting</li> </ul>	<ul style="list-style-type: none"> <li>-Produce GDP and inflation trend charts</li> <li>-Build macro dashboards</li> <li>-Analyse impact of</li> </ul>



		- Learn policy trade-offs intuitively - Work with real macro datasets	- Economy shock -response simulation	- <b>Canva:</b> macro dashboards - <b>IMF/FRED:</b> dataset extraction	monetary & fiscal policy
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**YEAR 2 — Applied Fields + Econometrics-Lite Tools**

Sem	Lab Theme	Objectives	Student Activities	Software / Tech Skills	Measurable Outcomes
Sem 3	<b>Development Economics Simulation Lab</b>	- Understand poverty, inequality, rural constraints - Learn simple regression intuitively - Experience micro-level decision-making	- Village household budget simulation - Microfinance lending game - Inequality experiments	- <b>Excel (Advanced)</b> : regression, pivot tables - <b>R (Beginner)</b> : import + plots - <b>Google MyMaps</b> : village mapping	-Conduct a simple regression in Excel -Create basic plots in R -Visualise development data on a map
Sem 4	<b>Public Policy &amp; Behavioural Economics Lab</b>	- Learn evidence-based policymaking - Build intuition of policy design	- Public goods & tax simulation - Nudge experiment - Before–after policy	- <b>R/Python (Beginner)</b> : cleaning, summary stats-	-Perform basic cleaning in R/Python -Build an impact dashboard

### YEAR 3 — Finance, Digital Economy & Sustainability Analytics

Sem	Lab Theme	Objectives	Student Activities	Software / Tech Skills	Measurable Outcomes
Sem 5	<b>Financial Markets Simulation Lab</b>	- Learn finance through trading & portfolio games -Understand risk-return, diversification, market behaviour	- Virtual stock market trading - Portfolio construction simulation - Insurance pooling game	- <b>Python (Finance):</b> import data, returns, volatility - <b>Excel (Finance):</b> portfolio analytics - <b>Trading Simulators:</b> Moneybhai/ TradingView	-Analyse stock returns in Python/Excel -Build a virtual portfolio and present performance -Calculate basic risk measures
Sem 6	<b>Environmental &amp; Sustainability Economics Lab</b>	- Understand climate economics, ESG & carbon markets- Use sustainability data for analysis- Apply predictive modelling intuitively	- Carbon trading simulation -Commons/ fisheries sustainability game - ESG investment simulation	- <b>Python/R (Intermediate):</b> trend analysis, moving averages - <b>Tableau / Power BI:</b> ESG dashboards - <b>QGIS Lite:</b> pollution mapping	-Analyse climate data using Python/R -Create ESG scorecards & dashboards -Map environmental indicators using GIS

#### Alignment with Top Global Universities

- **Harvard University:** AESL mirrors Harvard’s experiential and simulation-based approach to teaching microeconomics through market games and behavioural experiments.
- **MIT (Massachusetts Institute of Technology):** Progressive integration of Excel, R, Python, and data analysis in AESL reflects MIT’s data-first, technology-driven economics training.

- **London School of Economics (LSE):** AESL adopts LSE's emphasis on applied policy analysis and hands-on work with real datasets through development and public policy labs.
- **Stanford University:** Policy simulations, public goods games, and impact evaluation exercises in AESL align with Stanford's policy lab and behavioural decision-making model.
- **University of Oxford:** Behavioural simulations, intuitive econometrics, and applied microeconomic pathways in AESL parallel Oxford's practice of teaching economics through experiments and applied reasoning.

Together, these elements ensure AESL delivers an undergraduate learning experience inspired by the pedagogy and skill-development frameworks of the world's leading economics institutions.