Title. Methods and Models of Quantitative Economics

Code. 10501

Type. Professional optional

Academic year. 2018-2019

Semester. 2

Quantity of ECTS credits. 5.

Names of teachers: Raievneva O.V.**,** Stepurina S. O.

Results of studies. To determine the subject of modelling, choose the type of economic and mathematical model necessary for solving the applied tasks and form demands as for its constructing. To hold primary analysis of research information, reveal anomalous data, check the law of allocation of output data series. To evaluate the parameters of the regression model, determine its adequacy and forecast the change of the factor index with the help of the model. To evaluate the regression model as for multicolinearity and eliminate it if necessary. To use fictitious variables to evaluate influence of quality factors on educational systems development and reveal specific laws of the educational process. To apply methods of adaptive forecast by research of perspective and retrospective tendencies of educational processes development. To evaluate coherence of experts and expertise quality. To develop economic and mathematical models on the grounds of quantity and quality information. To use MS Exel and PPP Statistics for constructing economic and mathematical models. To form vectors of development of economic processes and phenomena on the grounds of the received forecast information. To determine fluctuations between planned and actual trajectories.

Obligatory previous educational subjects. Higher Mathematics.

Content. Methods of preliminary processing of statistical data of scientific research. Methods of economic processes development presented by time rows. Methods of economic processes research presented by qualitative and quantitative information. Methods of forming and indicating combinations of homogeneous economic objects. Modelling of complex economic processes with the help of equations system.

Recommended sources.

1. Statystyka: Navchalnyi posibnyk / Pid red. d-ra ekon. nauk, prof. Raievnievoi O.V. – Kh.: VD «INZhEK», 2011. – 504 s.

2. Statystychne modeliuvannia ta prohnozuvannia: Navchalnyi posibnyk / Pid red. d-ra ekon. nauk, prof. O. V. Raievnievoi. – Kh.: VD «INZhEK», 2014. – 578 s.

3. Plyuta V. Sravnitelnyi mnogomernyi analiz v ekonomicheskih issledovaniyah: Metodyi taksonomii i faktornogo analiza / Per, s pol. V. V. Ivanova; Nauch. red. V. M. Zhukovskoy. – M.: Finansy i statistika. – 1989. – 175 s.

4. Dickey D.A., Fuller W.A. Distribution of the estimators for autoregressive time-series with a unit root //Journal of the American statistical association. – 1979. – V. 74. – PP. 427 – 431.

5. Fisher, R.A. Statistical methods and scientific induction. Journal of the Royal Statistical Society, B, 17, 69 – 78, 1955.

6. Gencay R. Differentiating intraday seasonalities through wavelet multi-scaling / R. Gencay, F. Selcuk, B. Whitcher // Physica A., 2001. – №289. – P. 543–556.

7. Granger C.W., Morris MJ. Time series modelling and interpretation // J. of the Royal Stat. Soc. – 1976. – Ser. A. – Vol. 139. – Part. 2, p 234 – 256.

Methods of teaching:

Problem lectures, mini-lectures, forms of visual assistance and presentations. Communicative methods at laboratorial classes using information technologies.

Methods of assessment:

- current control (computer testing, defense of laboratorial work);
- module control (complex test, essay);
- final control (credit, state attestation).

Language of studies. Ukrainian.