

Advanced Academic Programs
Zanvyl Krieger School of Arts and Sciences
Johns Hopkins University

**AS.440.615 – Macroeconomic Forecasting
Summer 2022**

Course Information

Credit Hours: 3

Class Times: Thursday, 6:00 pm - 9:10 pm, from May 26 to August 11, total of 12 classes

Course Location: Washington DC Center/1717 Mass Ave/Room 207

Course Description: This course examines econometric approaches to forecasting macroeconomic activity. The approaches covered span single equation time series to large, complex, simultaneous equations systems. Different measures to assess the forecasting accuracy of these approaches are addressed. A discussion of these approaches and their relevance for policy recommendations is also covered. Prerequisites: 440.602 Macroeconomic Theory and Policy; 440.606 Econometrics.

Instructor Information

Instructor: Roumen Vesselinov

Telephone Number: (516) 462-4500 cell

Email Address: roumen@jhu.edu

Office Hours: By appointment

Please allow 24-48 hours for a response to emails, especially emails received over the weekend. In the event that an answer is detailed or complicated, I may suggest we speak over the phone.

What to Expect in this Course?

This course is 12 weeks in length. Please review the course syllabus thoroughly to learn about specific course outcomes and requirements. Appendices A and B have dates for all units and assignments and details for each unit.

Program Learning Objectives

When you successfully complete the program requirements, you will achieve the following goals:

- P4 Construct advanced econometric and other quantitative models to estimate, test, and forecast economic relationships

Course Learning Objectives

When you successfully complete the course, you will be able to:

- C1 Explain the theoretical underpinnings of modern macroeconomic forecasting.
- C2 Estimate and use a wide variety of macroeconomic forecasting models.

Required Textbook and Software

Textbook/s

- Elements of Forecasting, Francis X. Diebold. Free PDF textbook, available on Blackboard.

Software

Many assignments will require you to do computer work. It should be possible to do these homework assignments with a number of software packages, and any software output will be accepted.

We will use EViews in the instructions and output. EViews is available in the AAP computer labs. You can purchase a six-month license for the university version of EViews for \$50 using the link provided here: <https://estore.onthehub.com/>

There is also a free version of EViews, but it has some limitations that you should look into before using. Other possible software packages: STATA, R, Python, etc.

Other Prerequisites

In addition to any course requirements established by the university, you must be comfortable with the basics of time series analysis taught in introductory econometrics courses and you must be conversant in macroeconomic theory. You are assumed to be proficient in at least one software package that can be used to conduct advanced time series analysis – Stata, EViews, R, and Python are the ones students most commonly use.

Evaluation and Grading Policy

Your grade will be determined by your performance on the homework assignments (30%), midterm project (30%), and final project (40%).

Final Project Details

Consistent with the applied nature of this program and this course, instead of a final exam each student will be required to submit a final project.

The project will consist of the selection of a macroeconomic series of interest, discussion of the series' properties, estimation of a reasonable forecasting model for the series, discussion of the process used to select that model, production of a forecast for that series using the selected model, and discussion of the forecast. Projects will be graded on a scale of 0 to 100.

Schedule

This schedule is subject to change with fair notice.

We meet every Thursday, from May 26 to August 11, 2022, on DC Campus, Room 207.

#	Date	Topic	Assignment
1	May 26	Chapter 1: Introduction to Forecasting Chapter 2: A Brief Review of Probability, Statistics, and Regression for Forecasting Chapter 3: Six Considerations to Successful Forecasting	
2	June 2	Chapter 4: Statistical Graphics for Forecasting Chapter 5: Modeling and Forecasting Trend	
3	June 9	Chapter 6: Modeling and Forecasting Seasonality	HW # 1
4	June 16	Chapter 7: Characterizing Cycles	
5	June 23 Reschedule	Chapter 8: Modeling Cycles: MA, AR, and ARMA Models	HW # 2
6	June 30	Chapter 9: Forecasting Cycles	HW # 3
7	July 7 Reschedule	Chapter 10: Putting It All Together: A Forecasting Model with Trend, Seasonal and Cyclical Components	Midterm project due.
8	July 14	Chapter 11: Forecasting with Regression Models	
9	July 21	Chapter 12: Evaluating and Combining Forecasts	HW # 4
10	July 28	Chapter 13: Unit Roots, Stochastic Trends, ARIMA Forecasting Models, and Smoothing	
11	August 4	Chapter 14: Volatility Measurement, Modeling, and Forecasting	HW # 5
12	August 11	Overview	Final project due.

University Policies

General

This course adheres to all University policies described in the academic catalog. Please pay close attention to the following policies:

Academic Conduct

All JHU students assume an obligation to conduct themselves in a manner appropriate to the Johns Hopkins University's mission as an institution of higher education and with accepted standards of ethical and professional conduct. Students must demonstrate personal integrity and honesty at all times in completing classroom assignments and examinations, in carrying out their fieldwork or other applied learning activities, and in their interactions with others. Students are obligated to refrain from acts they know or, under the circumstances, have reason to know will impair their integrity or the integrity of the University. Students and faculty in Advanced Academic Programs are required to adhere to the academic integrity guidelines and process laid out in the [Graduate Academic Misconduct Policy](#). Refer to the website for more information regarding the academic misconduct policy.

Ethics & Plagiarism

JHU Ethics Statement: The strength of the university depends on academic and personal integrity. In this course, you must be honest and truthful. Ethical violations include cheating on exams, plagiarism, reuse of assignments, improper use of the Internet and electronic devices, unauthorized collaboration, alteration of graded assignments, forgery and falsification, lying, facilitating academic dishonesty, and unfair competition. Report any violations you witness to the instructor.

Read and adhere to JHU's [Notice on Plagiarism](#).

Copyright Policy

All course materials are the property of JHU and are to be used for the student's individual academic purpose only. Any dissemination, copying, reproducing, modification, displaying, or transmitting of any course material content for any other purpose is prohibited, will be considered misconduct under the [JHU Copyright Compliance Policy](#), and may be cause for disciplinary action. In addition, encouraging academic dishonesty or cheating by distributing information about course materials or assignments which would give an unfair advantage to others may violate AAP's [Code of Conduct](#) and the University's [Student Conduct Code](#). Specifically, recordings, course materials, and lecture notes may not be exchanged or distributed for commercial purposes, for compensation, or for any purpose other than use by students enrolled in the class. Other distributions of such materials by students may be deemed to violate the above University policies and be subject to disciplinary action.

Students with Disabilities

Johns Hopkins University is committed to providing reasonable and appropriate accommodations to students with disabilities. Students with documented disabilities should contact the coordinator listed on the [Disability Accommodations](#) page. Further information and a link to the Student Request for Accommodation form can also be found on the [Disability Accommodations](#) page.

Dropping the Course

You are responsible for understanding the university's policies and procedures regarding withdrawing from courses found in the current catalog. You should be aware of the current deadlines according to the [Academic Calendar](#).

Getting Help

You have a variety of methods to get help on Blackboard. Please consult the resource listed in the "Blackboard Help" link for important information. If you encounter technical difficulty in completing or submitting any online assessment, please immediately contact the designated help desk listed on the [AAP online support page](#). Also, contact your instructor at the email address listed in the syllabus.

Title IX Confidentiality and Mandatory Reporting

As an instructor, one of my responsibilities is to help create a safe and inclusive learning environment on our campus. I also have mandatory reporting responsibilities related to my role as a Responsible Employee under the Sexual Misconduct Policy & Procedures (which prohibits sexual harassment, sexual assault, relationship violence and stalking), as well as the General Anti-Harassment Policy (which prohibits all types of protected status-based discrimination and harassment). It is my goal that you feel able to share information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings. I will seek to keep information you share private to the greatest extent possible. However, I am required to share information that I learn of regarding sexual misconduct, as well as protected status-based harassment and discrimination, with the Office of Institutional Equity (OIE). For a list of individuals/offices who can speak with you confidentially, please see Appendix B of the [JHU Sexual Misconduct Policies and Laws](#).

For more information on both policies mentioned above, please see: [JHU Relevant Policies, Codes, Statements and Principles](#). Please also note that certain faculty and other University community members also have a duty as a designated Campus Safety Authority under the Clery Act to notify campus security of certain crimes, as well as a duty under State law and University policy to report suspected child abuse and/or neglect.

Diversity

Johns Hopkins is a community committed to sharing values of diversity and inclusion in order to achieve and sustain excellence. We firmly believe that we can best promote excellence by recruiting and retaining a diverse group of students, faculty, and staff and by creating a climate of respect that is supportive of their success. This climate for diversity, inclusion, and excellence is critical to attaining the best research, scholarship, teaching, health care, and other strategic goals of the Health System and the University. Taken together these values are recognized and supported fully by the Johns Hopkins Institutions leadership at all levels. Further, we recognize that the responsibility for excellence, diversity, and inclusion lies with all of us at the Institutions: leadership, administration, faculty, staff, and students.

For more information on JHU's commitment to diversity, please visit the [Diversity at JHU](#) website.

Student Conduct Code

The fundamental purpose of the Johns Hopkins University's (the "University" or "JHU") regulation of student conduct is to promote and to protect the health, safety, welfare, property, and rights of all members of the University community as well as to promote the orderly operation of the University and to safeguard its property and facilities. As members of the University community, students accept certain responsibilities which support the educational mission and create an environment in which all students are afforded the same opportunity to succeed academically.

For a full description of the code please visit the [Student Conduct Code](#) website.

Course Evaluation

Please remember to complete an online course evaluation survey for this course. These evaluations are an important tool in the ongoing efforts to improve instructional quality and strengthen programs. The results of the course evaluations are kept anonymous – your instructor will only receive aggregated data and comments for the entire class. An email with a link to the online course evaluation form will be sent to your JHU email address close to the end of the semester.