Economics (ECON)

Raja Kali
Department Chair
Business Building
rkali@walton.uark.edu

Pete McGee
Ph.D. and M.A. Program Director
Business Building
pmcgee@walton.uark.edu

Jingping Gu
M.S. Program Director
Willard J. Walker Hall
jgu@walton.uark.edu (jgu@walton.uark.edu)

Degrees Conferred:
M.A., Ph.D. in Economics (ECON)
M.S. in Economic Analytics (ECAN)

Program Descriptions: The skills and knowledge needed in today's economic climate are changing as quickly as technology and practices in the business world. The three degrees offered — a Master of Arts in Economics, a Master of Science in Economic Analytics and the Doctor of Philosophy in Economics — offer exceptional preparation for pursuing an academic career or working in the private or public sectors. This innovative program combines the study of economic theory and applied econometrics to provide rigorous training and preparation for your chosen career.

M.A. in Economics

Admission Requirements and Prerequisites to Degree Program: Students must apply to and meet the admission requirements (http://catalog.uark.edu/graduatecatalog/business/) of the Graduate School of Business and be admitted by the departmental admissions committee. Additionally, applicants must show satisfactory performance in the following courses: intermediate microeconomics, intermediate macroeconomics, statistics, two semesters of calculus, and linear algebra. Students from all academic backgrounds are encouraged to apply.

Academic Standing and Dismissal: Please see the Graduate School of Business policy for more information.

Degree Options: Students must select the Non-Thesis or Thesis option. Both options combine a study of economic theory, applied econometrics, and an applied field that will prepare students for careers in the private or public sector, or for doctoral programs. The Non-Thesis option can be completed in one year. The Thesis option is for students who seek more advanced skills. It requires additional coursework and a thesis, and will take three or four semesters to complete.

Common Requirements for the Master of Arts Degree, Non-Thesis and Thesis Options: All master's students must satisfactorily complete the 30 hours of course work listed below. Students must have a 3.00 cumulative grade point average in order to graduate. If at any point, a student's cumulative GPA falls below a 3.00, the student will be placed on academic probation. A student with a cumulative GPA below 3.00 for two consecutive semesters will be dismissed from the program.

Core Requirements (21 hours)

ECON 61303	Mathematics for Economic Analysis	3
ECON 62103	Microeconomic Theory I	3
ECON 62203	Microeconomic Theory II	3
ECON 63103	Macroeconomic Theory I	3
ECON 63203	Macroeconomic Theory II	3
ECON 66103	Econometrics I	3
ECON 66203	Econometrics II	3
or ECON 66303	Econometrics III	
Students must complete 6 hours of Applied Field coursework [1]		6
Students must complete a minimum of 3 hours of Graduate Seminar [2]		3
ECON 6430V	Seminar in Economic Theory and Research I	
ECON 6440V	Seminar in Economic Theory and Research II	
Total Hours		**30**

[1]Applied Field coursework (6 hours): Each student shall complete at least six hours of coursework in one applied field. Students who seek advanced training in applied economics and business in preparation for entering business or government employment should select one of the following fields: finance, accounting, marketing, supply chain management, information systems, or business analytics. Students who plan to enter a doctoral program should choose mathematics or statistics as their field. Other Applied Field coursework may be possible with the approval of the Program Coordinator.

[2]Graduate Seminar (3 hours): Students must register for at least one hour of graduate seminar each semester they are in residence.

Additional Degree Requirements, Non-Thesis Option (30 hours): In addition to 30 hours of required coursework, students who select the non-thesis option must take a comprehensive exam. Students must pass written exams in microeconomics and macroeconomics. The final exams at the end of ECON 62203 Microeconomic Theory II and ECON 63203 Macroeconomic Theory II will be comprehensive over both Micro I & II and Macro I & II. These two exams will be taken by all students in the course and will serve as the comprehensive exam for master's students. Each exam has three possible grades: Pass, Marginal Pass, and Fail. Students must earn at least a Marginal Pass on both exams.

Should a Ph.D. student later decide to receive the master's degree, the master's comprehensive examination requirement will have been satisfied if the student received at least a Marginal Pass on both exams. These exams will be developed and graded by the instructor of record for the courses. In cases where a student's performance might produce a "Fail," the instructor will consult with the faculty who normally develop the Ph.D. preliminary examination in that area.

Additional Degree Requirements, Thesis Option (Minimum of 42 hours): This option is intended for students who seek the acquisition of advanced analytical and research skills. Students who select the Thesis option must pass 30 hours of required coursework specified above, 12 additional hours of coursework – 6 hours approved by the Program Director and 6 hours of thesis credit, and pass a comprehensive exam. The comprehensive exam will take the form of a formal thesis defense.

Requirements for M.S. in Economic Analytics

Admission Requirements: Students must apply to and meet the admission requirements (http://catalog.uark.edu/graduatecatalog/business/) of the Graduate School of Business and be admitted by the departmental admissions committee.

Prerequisites to Degree Program: Students entering the M.S. in Economic Analytics program are expected to have already mastered

basic economic concepts or, demonstrated, with an official GMAT or GRE test score, the ability to master economic concepts taught in the program. Students without academic backgrounds in economics may be required to take additional hours or noncredit preparatory classes prior to enrollment in the M.S. program. Students from all academic backgrounds are encouraged to apply.

Requirements for the Master of Science Degree: Requirements include one or more courses from each of the following core areas: Data Management, Economic Models, Econometrics and Data Science, and Communication and Professional Development.

Academic Standing and Dismissal: Please see the Graduate School of Business policy for more information.

Students whose previous studies or experience indicate mastery of basic economic concepts must satisfactorily complete the 30 hours of coursework listed below.

Core Courses (30 hours)

ECON 52603	Applied Microeconomics	3
ECON 57403	Introduction to Econometrics	3
ECON 57503	Forecasting	3
ECON 57803	Applied Microeconometrics	3
ECON 58103	Economic Analytics I	3
ECON 58203	Economic Analytics II	3
ECON 58303	Data Exploration and Communication for Economics	3
ECON 58403	Economic Policy and Data Analysis	3
ISYS 51003	Data Analytics Fundamentals	3
3 hours of approved ECON elective		3
Total Hours		**30**

Additional Degree Requirements, Non-Thesis Option
In addition to 30 hours of required coursework, students must take a comprehensive exam. The comprehensive exam will take the form of the final project in ECON 58203 Economic Analytics II. An individual's grade of B or above in the project will be considered a pass on the comprehensive exam.

Ph.D. in Economics

Admission Requirements and Prerequisites to Degree Program: Students must apply to the Graduate School of Business (GSB) and meet the requirements (http://catalog.uark.edu/graduatecatalog/business/) of both Graduate School and International Education and GSB. Students must be admitted by the departmental admissions committee. Students from all academic backgrounds are encouraged to apply.

Prerequisites to Degree Program: Satisfactory performance in the following courses: intermediate microeconomics, intermediate macroeconomics, statistics, two semester of calculus, and linear algebra.

Program of Study: The nature of the program of study will vary somewhat depending upon the objective of the prospective candidate. Program requirements must balance credit hours for required coursework, research, and dissertation preparation. All doctoral students in Economics must satisfactorily complete the 75 hours of required courses including a graduate seminar each semester they are on graduate assistantships.

Required Courses

ECON 61303	Mathematics for Economic Analysis	3
ECON 62103	Microeconomic Theory I	3
ECON 62203	Microeconomic Theory II	3
ECON 63103	Macroeconomic Theory I	3
ECON 63203	Macroeconomic Theory II	3
ECON 66103	Econometrics I	3
ECON 66203	Econometrics II	3
ECON 66303	Econometrics III	3
ECON 57803	Applied Microeconometrics	3
ECON 68303	International Trade and Development I	3
ECON 68403	International Trade and Development II	3
ECON 69203	Experimetrics	3
ECON 69303	Behavioral Economics	3
ECON 69103	Experimental Economics	3
BUSI 61101	Seminar in Business Administration Teaching I	1
Students on assistantship must enroll in BUSI 61101. Other students may enroll in an additional hour of ECON 6430V or ECON 6440V in lieu of BUSI 61101.		
Research Requirements		
Students must register for at least one hour of graduate seminar (ECON 6430V/ECON 6440V) each semester they are in residence and for three hours of ECON 6430V the summer following their first year in the program		
ECON 6360V	Special Problems in Economics	3
ECON 6430V	Seminar in Economic Theory and Research I	7
ECON 6440V	Seminar in Economic Theory and Research II	4
Dissertation Hours (see the explanation below)		
ECON 7000V	Doctoral Dissertation	18
Total Hours		**75**

Candidacy Examinations
All students must pass a Candidacy Exam, which consists of two components.

The first component entails written Comprehensive Examinations in microeconomics and macroeconomics. These exams will normally be taken in the summer after a student's first year in the program. Each exam has two possible grades: Pass or Fail. Students must earn a Pass on both of the exams. A student will normally have two opportunities to pass each Comprehensive Examination, with the second opportunity typically occurring in that January following the first attempt. If a student's exam scores are not satisfactory, all exams for which a grade of Pass was not earned must be retaken. Only the most recent grade will be used in determining if this requirement has been met. Failure to successfully complete this requirement will result in a student being dismissed from the program.

The second component is a Field Examination, which is satisfied by a research paper on a topic in the student's chosen field of study. Students complete two fields of study within economics as part of the required courses:

- Behavioral economics (ECON 69103 Experimental Economics and ECON 69303 Behavioral Economics) and
- International Trade and Development (ECON 68303 International Trade and Development I and ECON 68403 International Trade and Development II).

Other fields are possible with the approval of the Ph.D. Coordinator. The paper is to be completed by the end of the fall semester of the

student's third year, during which the student completes the required field courses. The field paper topic must be approved by the student's advisor and registered with the Ph.D. Coordinator. The Field Examination is satisfactorily fulfilled when the student's committee passes a defense of the completed paper. When feasible, the paper will be presented at a departmental seminar before it is approved by the student's adviser or soon after. Failure to successfully complete this requirement will result in a student being dismissed from the program.

Enrollment requirements for students on graduate assistantships who have successfully passed the Candidacy Examination can be found in the university's Graduate Catalog.

Dissertation
The dissertation demonstrates a student's ability to select, define, organize, and complete a major research project. It should validate that the student has technical mastery of the field, is capable of doing independent scholarly research, and is able to formulate conclusions that enlarge the body of economic knowledge. Dissertation requirements include (1) a defense of proposal and (2) completion of an acceptable doctoral dissertation. Students must enroll in a total of 18 hours of dissertation credit.

Final Examination
The final examination is normally an oral defense of the student's dissertation.

Graduate Faculty
Bhattacharya, Puja, Ph.D., M.A. (Ohio State University), M.S. (Indian Statistical Institute), B.S. (Presidency College), Assistant Professor, 2019.

Brownback, Andrew P., Ph.D. (University of California, San Diego), B.A. (Kansas State University), Associate Professor, 2015, 2021.
Celik, Bilal, Ph.D. (University of Tennessee), M.S. (University of Illinois), B.A. (Ege University), Teaching Assistant Professor, 2023.
Civelli, Andrea, Ph.D., M.A. (Princeton University), B.A. (Bocconi University, Milan), Associate Professor, 2010, 2017.
Embaye, Abel, Ph.D. (Georgia State University), M.A. (Tilburg University), B.A. (University of Asmara), Clinical Assistant Professor, 2010.
Farmer, Amy Lynn, Ph.D., M.A. (Duke University), B.S. (Purdue University), University Professor, Margaret Gerig and R.S. Martin Jr. Chair in Business, 1999, 2003.
Ferrier, Gary D., Ph.D. (University of North Carolina–Chapel Hill), B.A. (University of Wisconsin-Madison), University Professor, Lewis E. Epley Jr. Professorship in Economics, 1993, 2012.
Gaduh, Arya, Ph.D. (University of Southern California), M.Phil. (Cambridge University), B.A. (University of California-Berkeley), Associate Professor, 2013, 2019.
Geng, Difei, Ph.D. (Vanderbilt University), M.A. (Southern Methodist University), M.A. (Nankai University), B.A. (Tianjin University of Finance and Economics), Assistant Professor, 2016.
Gu, Jingping, Ph.D. (Texas A&M University), M.A. (Peking University), B.A. (Renmin University of China, Bejiing), Associate Professor, 2008, 2014.
Hong, Ye "Abby", Ph.D. (University of Tennessee), M.S. (University of Illinois), B.S. (Nanjing University of Science and Technology), Teaching Assistant Professor, 2022.
Hossain, Md Amzad, Ph.D., M.A. (University of Virginia), B.S.S. (University of Dhaka), Assistant Professor, 2022.

Jung, Hyunseok, Ph.D. (Syracuse University), M.A. (Korea Development Institute), B.A. (Seoul National University), Assistant Professor, 2018.
Kali, Raja, Ph.D., M.A. (University of Maryland University College), B.S.C. (University of Calcutta), Professor, ConocoPhillips Chair in International Education, 1999, 2013.
Li, Xin "Sherry", Ph.D. (University of Michigan), M.A. (Syracuse University), M.A., B.A. (Renmin People's University of China), Professor, 2018.
Liu, Andrew Yizhou, Ph.D., M.A. (University of California, Santa Barbara), B.A. (Nanjing University), Assistant Professor, 2020.
Mao, Ruoyun, Ph.D. (Indiana University), B.A. (Sun Yat-sen University), Assistant Professor, 2023.
McGee, Peter J., Ph.D. (Ohio State University), B.S. (Tulane University), Associate Professor, 2014, 2018.
Miller, Logan, Ph.D., M.S., B.A. (University of Arkansas), Teaching Assistant Professor, 2023.
Park, Doyoung, Ph.D., M.A. (University of Colorado) B.S. (Sogang University, Seoul), Assistant Professor, 2019.
Rahman, Muhammad, Ph.D. (Indiana University), M.S., B.S. (University of Dhaka), Clinical Assistant Professor, 2014.
Stapp, Robert Bruce, Ph.D., M.S. (Oklahoma State University), B.S.B.A. (Oklahoma City University), Clinical Professor, 1995, 2012.

Courses
ECON 52403. Managerial Economics. 3 Hours.
This course will provide students with a strong foundation in core economics principles, with emphasis on industrial organization issues and applications geared toward the supply-chain and retail focus of the redesigned MBA program. (Typically offered: Fall and Spring)

ECON 52503. Economics of Management and Strategy. 3 Hours.
Information economics and applied game theory. (Typically offered: Irregular)

ECON 52603. Applied Microeconomics. 3 Hours.
The framework for this course is the economic way of thinking. Both the theory and application of important economics questions are presented, showing students the applicability of various economic methodologies in a number of different contexts. To gain competence in the applied side of economic analysis, students will use MS Excel or other software to apply class concepts to solve concrete problems. Prerequisite: ECON 52403 and (ECON 57403 or AGEC 56103). (Typically offered: Spring)

ECON 54203. Behavioral Economics. 3 Hours.
Both economics and psychology systematically study human judgment, behavior, and well-being. This course surveys attempts to incorporate psychology into economics to better understand how people make decisions in economic situations. The course will cover models of choice under uncertainty, choice over time, as well as procedural theories of decision making. Graduate degree credit will not be given for both ECON 44203 and ECON 54203. Prerequisite: ECON 22003 or ECON 21403. (Typically offered: Spring)

ECON 54303. Experimental Economics. 3 Hours.
The course offers an introduction to the field of experimental economics. Included are the methodological issues associated with developing, conducting, and analyzing controlled laboratory experiments. Standard behavioral results are examined and the implications of such behavior for business and economic theory are explored. Graduate degree credit will not be given for both ECON 44303 and ECON 54303. Prerequisite: ECON 22003 or ECON 21403. (Typically offered: Fall)

ECON 57403. Introduction to Econometrics. 3 Hours.
Introduction to the application of statistical methods to problems in economics. Graduate degree credit will not be given for both ECON 47403 and ECON 57403. Prerequisite: ((ECON 21003 and ECON 22003) or ECON 21403) and ((MATH 22003 or MATH 24004 or higher)) and (BUSI 10303 or MATH 21003). (Typically offered: Spring)

ECON 57503. Forecasting. 3 Hours.
The application of forecasting methods to economics, management, engineering, and other natural and social sciences. The student will learn how to recognize important features of time series and will be able to estimate and evaluate econometric models that fit the data reasonably well and allow the construction of forecasts. Graduate degree credit will not be given for both ECON 47503 and ECON 57503. Prerequisite: (ECON 21003 and ECON 22003) or (ECON 21403) and (MATH 22003 or MATH 24004) and (BUSI 10303 or MATH 21003). (Typically offered: Fall)

ECON 57803. Applied Microeconometrics. 3 Hours.
This course covers the principles of causal inference. Methods include panel data models, instrumental variables, regression discontinuity designs, difference-in-differences, and matching. Emphasis on developing a solid understanding of the underlying econometric principles of the methods taught as well as on their empirical application. Prerequisite: ECON 57403 or AGEC 56103. (Typically offered: Fall)

ECON 58103. Economic Analytics I. 3 Hours.
Part one of the capstone in the Masters in Economic Analytics. The course provides an overview of modern statistical learning methods, including Machine Learning, along with hands-on experience of in-depth analytics exercises using real data. Students will be given a set of datasets early in the semester and will use them for in-class exercises, assignments, and a class project. Students will make use of the most advanced learning libraries available in Python to gather and organize data as well as to train, validate, and test their empirical models. Prerequisite: ECON 47403 or ECON 57403 or ISYS 41903. (Typically offered: Fall)

ECON 58203. Economic Analytics II. 3 Hours.
Part two of the capstone in the Masters in Economic Analytics. The MS in Economic Analytics is a professional degree primarily designed to lay a strong foundation for a career in economic analytics. The career preparation culminates with a capstone project. In this course, students work in small teams to (i) develop capstone topics, (ii) formulate hypotheses related to their projects, (iii) find appropriate datasets, and (iv) analyze their datasets to test hypotheses using the econometric models/ techniques that they have learned over the course of the program. Prerequisite: ECON 58103. (Typically offered: Spring)

ECON 58303. Data Exploration and Communication for Economics. 3 Hours.
The course focuses on developing the skills to acquire, prepare, explore, and analyze different types of data, and communicate the results. Topics include understanding the structure of business and economic data, preparing data for analysis, fundamentals of exploratory data analysis, and presentation and communication of the results. Prerequisite: ECON 57403. (Typically offered: Fall)

ECON 58403. Economic Policy and Data Analysis. 3 Hours.
The course focuses on developing economic and data analysis skills to understand international, national, and regional macroeconomic policies. It emphasizes the use of data and economic theory to study macroeconomic indicators, macroeconomic topics such as national and regional income growth, monetary policies, employment, exchange rate regime; and other policy issues such as migration, environment and agriculture, and urban development. Prerequisite: ECON 57403 or instructor approval. (Typically offered: Spring)

ECON 6000V. Master's Thesis. 1-6 Hour.
Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

ECON 61303. Mathematics for Economic Analysis. 3 Hours.
This course will develop mathematical and statistical skills for learning economics and related fields. Topics include calculus, static optimization, real analysis, linear algebra, convex analysis, and dynamic optimization. Prerequisite: Graduate standing and MATH 24004 or equivalent. (Typically offered: Summer)

ECON 62103. Microeconomic Theory I. 3 Hours.
Introductory microeconomic theory at the graduate level. Mathematical formulation of the consumer choice, producer behavior, and market equilibrium problems at the level of introductory calculus. Discussion of monopoly, oligopoly, public goods, and externalities. (Typically offered: Fall)

ECON 62203. Microeconomic Theory II. 3 Hours.
Advanced treatment of the central microeconomic issues using basic real analysis. Formal discussion of duality, general equilibrium, welfare economics, choice under uncertainty, and game theory. (Typically offered: Spring)

ECON 63103. Macroeconomic Theory I. 3 Hours.
Theoretical development of macroeconomic models that include and explain the natural rate of unemployment hypothesis and rational expectations, consumer behavior, demand for money, market clearing models, investment, and fiscal policy. (Typically offered: Fall)

ECON 63203. Macroeconomic Theory II. 3 Hours.
Further development of macroeconomic models to include uncertainty and asset pricing theory. Application of macroeconomic models to explain real world situations. (Typically offered: Spring)

ECON 6360V. Special Problems in Economics. 1-6 Hour.
Independent reading and investigation in economics. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

ECON 6430V. Seminar in Economic Theory and Research I. 1-3 Hour.
Seminar. (Typically offered: Fall) May be repeated for up to 7 hours of degree credit.

ECON 6440V. Seminar in Economic Theory and Research II. 1-3 Hour.
Independent research and group discussion. (Typically offered: Spring) May be repeated for up to 4 hours of degree credit.

ECON 66103. Econometrics I. 3 Hours.
Use of economic theory and statistical methods to estimate economic models. The single equation model is examined emphasizing multicollinearity, autocorrelation, heteroskedasticity, binary variables and distributed lags. Prerequisite: MATH 22003 and knowledge of matrix methods, which may be acquired as a corequisite, and ECON 22003, and an introductory statistics course or equivalent. (Typically offered: Fall)

ECON 66203. Econometrics II. 3 Hours.
Use of economic theory and statistical methods to estimate economic models. The treatment of measurement error and limited dependent variables and the estimation of multiple equation models and basic panel data models will be covered. Additional frontier techniques may be introduced. Prerequisite: ECON 66103. (Typically offered: Spring)

ECON 66303. Econometrics III. 3 Hours.
Use of economic theory and statistical methods to estimate economic models. Nonlinear and semiparametric/nonparametric methods, dynamic panel data methods, and time series analysis (both stationary and nonstationary processes) will be covered. Additional frontier techniques may be covered. Prerequisite: ECON 66103. (Typically offered: Spring)

ECON 67103. Industrial Organization I. 3 Hours.
This course will develop the theory of modern industrial organization. The latest advances in microeconomic theory, including game theory, information economics and auction theory will be applied to understand the behavior and organization of firms and industries. Theory will be combined with empirical evidence on firms, industries and markets. Prerequisite: ECON 62103 and ECON 62203. (Typically offered: Fall)

ECON 67203. Industrial Organization II. 3 Hours.

This course surveys firm decisions, including setting prices, choosing product lines and product quality, employing price discrimination, and taking advantage of market structure. It will also cover behavioral IO, which reconsiders the assumption that firms and consumers are perfectly rational and examines the role of regulation. Prerequisite: ECON 61303. (Typically offered: Spring)

ECON 68303. International Trade and Development I. 3 Hours.

A first graduate level course in development economics with a focus on foundational theoretical issues. We explore the causation, implications, and remedies for pervasive and persistent poverty in low-income countries. Emphasis will be primarily on microeconomics topics. May be taken either as a precursor to International Development Economics II or stand-alone. Prerequisite: ECON 62103, (ECON 66103 or AGEC 56103) or by instructor's permission. (Typically offered: Fall)

ECON 68403. International Trade and Development II. 3 Hours.

A second graduate level course in development economics that focuses on the empirical aspect of development in low-income countries. The course explores various microeconomics topics related to poverty, human capital accumulation, and their interactions with role of public policy. Prerequisite: ECON 62103, (ECON 66103 or AGEC 56103) or instructor consent. (Typically offered: Spring)

ECON 69103. Experimental Economics. 3 Hours.

The course develops advanced concepts in the use of controlled experiments to test economic theory and explore behavioral regularities relating to economics. The class focuses on the methodology of experimental economics while reviewing a variety of established results. Prerequisite: ECON 62103. (Typically offered: Fall)

ECON 69203. Experimetrics. 3 Hours.

This course covers econometric techniques commonly used in experimental economics but infrequently covered in standard econometrics classes, e.g., power tests, non-parametric tests of means, simulated data, dealing with discrete and ordinal data, finite mixture models, structural estimation. This is an applied course and instruction will lean heavily on examples. Prerequisite: ECON 62103 and ECON 62203. (Typically offered: Fall)

ECON 69303. Behavioral Economics. 3 Hours.

This course surveys the frontier of behavioral economics, both theoretical and applied. Standard economic theory serves as a base for economics analysis, but when deviations from standard predictions are regularly and systematically observed, models have to modified to account better predict human behavior. Insights from psychology, biology, and neuroscience are incorporated economic models of both individual and strategic behavior. Prerequisite: ECON 62103 and ECON 62203. (Typically offered: Spring)

ECON 7000V. Doctoral Dissertation. 1-18 Hour.

Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.