

## Key to Course Listings

**Catalog numbers** are part of a University-wide numbering system. Generally, courses numbered 100 to 199 are introductory, 200-299 are intermediate, and 300-499 are advanced (upper-level).

**Reorganized or renumbered courses** are denoted by a parenthetical number in boldface following the course number. When renumbering or reorganization has left the SUBJECT unchanged, only the previous catalog number is given; if the SUBJECT has also changed, the previous SUBJECT name and course number appear. A reorganized or renumbered course cannot be repeated for credit without special permission.

**Cross-listed courses** are sponsored by more than one department or program and may be elected in any of the participating units. Cross-listings appear in boldface and are denoted by a slash between the participating units.

**Course titles** appear in boldface after the catalog number.

**Prerequisites** appear in italics after the course title. Some prerequisites are advisory. They suggest the assumed background or level of academic experience, and students should be guided by these statements. Some prerequisites are mandatory and are enforced at the point of registration. The *Course Guide* and the *LS&A Bulletin* indicate the cases when prerequisites are enforced.

Prerequisites are of three types:

- *Courses*. Unless otherwise stated, the phrase "or equivalent" may be considered an implicit part of the prerequisite for any course. When a student has satisfactorily completed a course(s) at the required level of competency and when that course is believed to be substantially equivalent to one listed as a prerequisite, the student must consult the instructor or department. If equivalency is determined to have been satisfied, election may be approved by issuance of electronic permission.
- *Class standing* (first year, sophomore, junior, senior). A course might be appropriate for "first and second year students only," or for "juniors and seniors."
- *Permission of instructor*. The phrase "or permission of instructor" may be considered an implicit part of the statement of prerequisites for any course. When permission is a stated requirement, or when a student does not have the stated prerequisite for a course but can give evidence of sufficient background, the student should obtain approval from the instructor or department concerned and an electronic permission issued.

**The Credit Symbol**, an Arabic numeral in parentheses, denotes the credits earned for the course. Credit is granted in semester hours. Except for small seminars where the reading and/or writing requirements are intensive, one credit represents no less than one hour of class meeting time each week of the term, and usually represents two hours of work outside of class for each class hour.

**Area distribution designation** is approved by the LS&A Curriculum Committee on a yearly basis. A course may be approved with the designation natural science (*NS*), social science (*SS*), humanities (*HU*), mathematical and symbolic analysis (*MSA*), creative expression (*CE*), interdisciplinary (*ID*), or excluded from distribution (*Excl*).

**Courses meeting certain college requirements** are so listed. Language other than English (*LR*) courses may be used toward meeting the Language Requirement. The First-Year Writing Requirement may be met by courses designated (Introductory Composition). Courses approved with the designation "Language Requirement" or "Introductory Composition" may not be used as part of an area distribution plan. If an introductory language course is designated "Excluded" (*Excl*), it may not be used to satisfy the LS&A language requirement. (*BS*) means that the course may be used toward the 60 approved credits required for the B.S. degree. Courses meeting or partially meeting the Quantitative Reasoning

requirement are designated (*QR/1*) or (*QR/2*). Courses with standard approval for meeting the Race & Ethnicity (*R&E*) requirement are so indicated. Other courses may meet the R&E or QR requirements on a term-by-term basis and are listed on the LS&A website (<http://www.lsa.umich.edu/>).

**Experiential, Independent Study, and Tutorial** courses are so designated. (See Experiential and Directed Reading/Independent Study Courses in *Chapter IV*.)

**Repetition** of a course that varies in content from term to term is permitted only under certain conditions. When a department or program has a policy about the repetition of a course for credit, that policy is included in the course listing. The general statement "May be repeated for credit with permission" usually means "With permission of a concentration advisor." In all other instances, a student must get permission from both the department or program and the Academic Standards Board to repeat a course for credit. Generally, a course may be elected for credit once only.

**Excluded combinations of course elections** are designated in the listing of affected courses.

**Special Grading pattern** for a course is indicated in the course listing. Some LS&A courses are offered *mandatory credit/no credit*. (See Non-Graded Courses in *Chapter IV*.)

**The Term Symbol**, a Roman numeral, denotes the term(s) some courses are offered. The University year is divided into three terms: Fall (I), Winter (II), and Spring-Summer (III). The Spring-Summer Term is further divided: Spring-Half (IIIa) and Summer-Half (IIIb).

### Courses That Count Toward Graduate Programs

*Courses Approved for Regular Rackham Graduate Credit*. All courses taken in fulfillment of Rackham degree requirements must be approved for Rackham graduate credit. Be certain that any courses you plan to take--especially those numbered in the 400s--are approved for Rackham credit before you enroll in them. The Graduate School policy on courses is as follows: Courses at the 400 level and above are acceptable for graduate credit if they have been approved by the Graduate School.

If you are uncertain whether or not a course is approved for Rackham credit, check with the department offering the course or with the Rackham Course Approval Officer (764-8221).

If you elect a course that has not been approved for Rackham graduate credit, the course will appear on your university transcript with the notation "Not for Graduate Credit. The course grade will appear on the transcript, but it will not be averaged into your cumulative grade point average or your credit toward program (CTP) total.

*Courses Not Approved for Graduate Credit*. Courses at the 300 level and below are not acceptable for graduate credit, without exception. Undergraduate level foreign language courses may occasionally be used in fulfillment of some departmental foreign language requirements.

Under unusual circumstances you may petition to receive graduate credit for a course not normally approved for graduate credit (*e.g.*, such as an undergraduate course where you will be expected to perform more advanced work than the undergraduates). Because there is no guarantee of approval, you should submit your petition to the Graduate School's Office of Academic Records and Dissertations (OARD) before taking the course. Your petition must be endorsed by the course instructor and by the graduate chair of your department or program, and it must include an explanation for requesting the exception. You will be expected to perform graduate level work in the course, and the petition must show how this will be accomplished. You may obtain a petition form from your department, from OARD, or online.

## Economics

### Economics

#### Economics ECON 358

LSA  
Economics  
Economics

<http://www.econ.lsa.umich.edu/econ/>

#### Undergraduate Courses

- 101 **ECON 101.**  
**Principles of Economics I.**  
 (4,3) : May not be repeated for credit.  
 (SS). (QR/2).  
*High school algebra and geometry. No credit granted to those who have completed or are enrolled in ECON 400. I, II, IIIa, and IIIb.*  
 The basic ideas of microeconomics: production, consumption, and the markets for outputs and inputs. The virtues of competitive markets are explored, and the causes and remedies of such market failures as monopoly, indivisibility, spillover costs and inequity are examined.
- 102 **ECON 102.**  
**Principles of Economics II.**  
 (4,3) : May not be repeated for credit.  
 (SS). (QR/2).  
*ECON 101. No credit granted to those who have completed or are enrolled in ECON 400. I, II, IIIa, and IIIb.*  
 The basic ideas of macroeconomics: employment, inflation, output, and growth. The determinants of the state of the market economy are explored, and the influence of monetary, fiscal, and other public policies are examined.
- 108 **ECON 108.**  
**Introductory Microeconomics Workshop.**  
 (1) : May not be repeated for credit.  
 (SS).  
*First-year standing and concurrent enrollment in ECON 101. Offered mandatory credit/no credit.*  
 Discussions of the previous week's *Wall Street Journal* articles, stressing the use and application of the microeconomic tools being learned in ECON 101.
- 195 **ECON 195.**  
**Seminar in Introductory Economics.**  
 (3,3) : May not be repeated for credit.  
 (SS).  
 This first-year seminar focuses on specific topics of current interest in economics. Instructors and topics vary from term to term. The course emphasizes reading, writing, and discussion of economic issues and points of view.
- 299 **ECON 299.**  
**Undergraduate Internship.**  
 (1,1) : May be repeated for credit for a maximum of 2 credits.  
 (Excl). (EXPERIENTIAL).  
*Consent of instructor (Prerequisites enforced at registration). Economics concentrators, with permission of concentration advisor; application required. Internship credit is not retroactive and must be prearranged. May not be used to satisfy economics electives for an economics concentration. Offered mandatory credit/no credit.*  
 Credit is granted for a full-time internship of at least eight weeks that enriches a student's academic experience and/or allows a student to explore careers related to his/her academic studies. Verification of the internship (after completion) must be provided by the student on company letterhead. Internship credit is not retroactive and must be prearranged.

- 309 **ECON 309.**  
**Experimental Economics.**  
 (3) : May not be repeated for credit.  
 (SS). (QR/1).  
*ECON 101. No credit granted to those who have completed or are enrolled in ECON 109. Laboratory fee (\$30) required.*  
 This course introduces students to the subject of economics through experience in a laboratory. By participating in laboratory experiments, then analyzing the results in class discussion and written reports, they learn the principles of economics from their own empirical observation.
- 310 **ECON 310.**  
**Money and Banking.**  
 (3,3) : May not be repeated for credit.  
 (SS).  
*ECON 101 and 102.*  
 The role of money, banking, and finance in the economy. At the macroeconomic level, we study how monetary policy influences interest rates, prices, and overall economic activity.
- 320 **ECON 320.**  
**Survey of Labor Economics.**  
 (3,3) : May not be repeated for credit.  
 (SS).  
*ECON 101 and 102.*  
 Overview of the economics of labor markets and income distribution (topics covered more intensively in ECON 421 and 422).
- 323 **ECON 323.**  
**Economics and Gender.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 101 and 102.*  
 Examines many aspects of the economic status of women, including their role in the labor market, their relative wages status, the incidence of poverty in female-headed households, and the importance of historical and demographic trends as determinants of the economic status of women.
- 325 **ECON 325 / POLSCI 332.**  
**Inequality in the United States.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 101 and 102, and POLSCI 111.*  
 Examines the distribution of economic resources in the United States. Topics include the relationships between access to economic resources and opportunities for human flourishing, how inequalities in resource distribution are properly compared and measured, various social scientific explanations for existing inequalities, and related economic policy questions.
- 327 **ECON 327.**  
**Economics of Crime.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 101 and 102.*  
 This course uses the tools of analysis introduced in the two Principles classes to discuss criminal choice, criminal organizations, the costs of crime, the provision of public protection, and resource allocation and efficiency in the criminal justice system.
- 330 **ECON 330.**  
**American Industries.**  
 (4,4) : May not be repeated for credit.  
 (SS).  
*ECON 101 and 102.*  
 A survey course which develops an analytic framework for evaluating the performance of major U.S. industries and examines the principal government policy instruments affecting industrial performance.

- 333 **ECON 333.**  
**Economic Analysis of Industrial Policy.**  
 (3,3) : May not be repeated for credit.  
 (SS).  
*ECON 101 and 102.*  
 This course examines the changing, and developing, international economy, its consequences for the United States economy, and the demands for an "Industrial Policy" to address these consequences. Topics include: trade and proposed barriers to trade, antitrust in international markets, labor market dislocations and adjustments, automation and research and development. Emphasis is placed on the interacting economic and political dimensions of these topics.
- 340 **ECON 340.**  
**International Economics.**  
 (3,3) : May not be repeated for credit.  
 (SS).  
*ECON 101 and 102.*  
 A general course with an introduction to the fundamentals of theory, but with major emphasis upon important contemporary policy issues in the field of international economics.
- 350 **ECON 350.**  
**Comparative Economic Systems.**  
 (3,3) : May not be repeated for credit.  
 (SS).  
*ECON 101 and 102. No credit granted to those who have completed or are enrolled in ECON 451.*  
 Models of capitalism and socialism and of market and planned economies, and case studies of selected economies. Designed for students who wish a general introduction to the subject.
- 357 **ECON 357 / CAAS 357.**  
**Economic History of African-Americans.**  
 (3,3) : May not be repeated for credit.  
 (SS).  
*CAAS 201 recommended.*  
 This course covers the economic history of Africans in America from the 15th century to the present, with emphasis placed on the historical roots of contemporary African-American life.
- 360 **ECON 360.**  
**The Developing Economies.**  
 (3,3) : May not be repeated for credit.  
 (SS).  
*ECON 101 and 102. No credit granted to those who have completed or are enrolled in ECON 461.*  
 Examination of the structure and problems of the low-income nations; an analysis of the economic issues of development policy; and discussion of the economic relationships between the poor and rich nations of the world. Designed for students who wish a relatively nontechnical introduction to the problems of economic development.
- 370 **ECON 370 / ENVIRON 375.**  
**Environmental and Resource Economics.**  
 (3,3) : May not be repeated for credit.  
 (SS).  
*ECON 101. No credit granted to those who have completed or are enrolled in ECON 471 or 472. II.*  
 An introduction to environmental and natural resource economics. Topics include externalities, unpriced goods, cost-benefit analysis, resource scarcity, exhaustible resource depletion, renewable resource harvesting, and common property problems.
- 380 **ECON 380.**  
**Public Finance.**  
 (3,3) : May not be repeated for credit.  
 (SS).  
*ECON 101 and 102. No credit granted to those who have completed or are enrolled in ECON 481 or 482.*  
 A survey of government expenditure and revenue issues, designed for students wishing to take a single comprehensive course in the field of public finance. Students wishing to elect two courses in public finance should elect ECON 481 and ECON 482.

- 395 **ECON 395.**  
**Topics in Economics and Economic Policy.**  
 (1-3,1-3) : May be elected for a maximum of 6 credits. May be elected more than once in the same term.  
 (Excl).  
*ECON 101 and 102.*  
 This course focuses on specific topics of current interest in economics and economic policy. Instructors and topics vary from term to term. The course emphasizes applications of economic approaches from a variety of fields to the analysis of real-world economic issues.
- 398 **ECON 398.**  
**Strategy.**  
 (4) : May not be repeated for credit.  
 (MSA). (BS).  
*ECON 101. No credit granted to those who have completed or are enrolled in ECON 409 or RCSSCI 222 or SOC 222.*  
 This course is an introduction to the science of strategic thinking and the art of equity. Basics of non-cooperative game theory are covered via simple cases in business, bargaining among agents, auctions (or in general market interactions), political decision making, voting, etc.
- 490 **ECON 490.**  
**Current Topics in Economics.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 and 402 with a grade of at least C- (Prerequisites enforced at registration). ECON 404 or 405.*  
 Sections cover specialized topics and topics that span subfields in economics. The topics are presented at an advanced undergraduate level. Topics vary with the interests of the faculty member teaching the section.
- 495 **ECON 495.**  
**Seminar in Economics.**  
 (3,3) : May be repeated for credit for a maximum of 6 credits.  
 (Excl).  
*ECON 401 and 402 with a grade of at least C-; Consent of instructor required (Prerequisites enforced at registration). ECON 404 or 405; application required.*  
 Seminar sections cover specialized topics and topics that span the subfields in economics. The topics are presented and discussed at an advanced undergraduate level. The specific topics vary with the faculty member teaching the seminar section.
- 498 **ECON 498.**  
**Honors Independent Research.**  
 (1-4,1-4) : May be repeated for credit for a maximum of 8 credits.  
 (Excl). (INDEPENDENT).  
*Consent of instructor required (Prerequisites enforced at registration). Open only to students admitted to Honors concentration in economics. Continuing Course. Y grade can be reported at end of the first-term to indicate work in progress. At the end of the second term of ECON 498, the final grade is posted for both term's elections.*  
 Each student completes a paper for the honors thesis requirement under the direction of the director of the honors program in economics and an additional faculty member.

### **Undergraduate Courses; Graduate credit with Additional Work**

- 400 **ECON 400.**  
**Modern Economic Society.**  
 (4,3;4,3) : May not be repeated for credit.  
 (Excl).  
*For upperclass and graduate students without prior credit for principles of economics. No credit granted to those who have completed or are enrolled in ECON 101 or 102. Rackham credit requires additional work.*  
 A single-term accelerated treatment of the material of ECON 101 and 102. (ECON 400 is sometimes permitted to serve as a prerequisite for advanced courses in Economics.

- 401 **ECON 401.**  
**Intermediate Microeconomic Theory.**  
 (4,4;4,4) : May not be repeated for credit.  
 (Excl). (BS). (QR/1).  
*MATH 115, 116, 121, 156, 175, 176, 185, 186, 215, 295 or 296; with C or better (Prerequisites enforced at registration). ECON 101 and 102. Rackham credit requires additional work. I, II, IIIa.*  
 A systematic study of the role of the price system in organizing economic activity and an evaluation of its effectiveness. Analytical tools are developed and applied to the activities of the household, the firm, and to their interactions in the market under varying degrees of competition.
- 402 **ECON 402.**  
**Intermediate Macroeconomic Theory.**  
 (4,4;4,4) : May not be repeated for credit.  
 (Excl). (BS). (QR/1).  
*ECON 101 and 102, and MATH 115. It is strongly recommended that students take ECON 401 before 402. Rackham credit requires additional work. I, II, IIIa.*  
 A systematic study of the theory of aggregate demand, the degree of utilization of productive capacity, and the general level of prices.
- 403 **ECON 403.**  
**Advanced Economic Theory.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). Rackham credit requires additional work.*  
 The course stresses mathematical techniques which are used in contemporary economic theory and treats economic theory as a subject of intrinsic interest as well as a tool to be used in various empirical areas. The range of possible topics for the course is extremely broad, and coverage during any particular term is determined by the interests of the students and the instructor.
- 404 **ECON 404.**  
**Statistics for Economists.**  
 (4,4;4,4) : May not be repeated for credit.  
 (Excl). (BS). (QR/1).  
*ECON 101 and 102 and MATH 115. No credit granted to those who have completed or are enrolled in ECON 405 or STATS 350, 265, 311, 350, 400, 405, or 412. Rackham credit requires additional work. I, II, IIIa.*  
 This course is designed to equip students to read empirical literature in economics and other social sciences. Topics include tabular and regression analysis and emphasize multiple regression.
- 406 **ECON 406.**  
**Introduction to Econometrics.**  
 (4,4;4,4) : May not be repeated for credit.  
 (Excl). (BS).  
*ECON 405 or STATS 426. Rackham credit requires additional work. II.*  
 This course, a continuation of ECON 405, is intended to prepare students to conduct empirical research in economics. The classical linear regression model is developed with special emphasis on the basic assumptions of the model, economic situations in which the assumptions are violated, and alternative estimation procedures that are appropriate in these cases. Computer exercises are used to introduce students to special problems encountered in the analysis of economic data.
- 408 **ECON 408.**  
**Philosophy and Economics.**  
 (3;3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with at least a C- (Prerequisites enforced at registration). Rackham credit requires additional work.*  
 Explores several conceptually challenging philosophical issues in and about economics including questions about the scientific status of economics, puzzles arising within economic theory (especially concerning the notion of rationality), and matters concerning the relation between economic theories and fundamental normative questions of economic policy.

- 411 **ECON 411.**  
**Monetary and Financial Theory.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 402 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). ECON 404 or 405. Rackham credit requires additional work.*  
 Modern financial markets and the role of monetary policy in influencing asset prices and the economy. Formal development of monetary and financial economics. Topics include interest rate determination, portfolio theory, regulation of financial institutions, money supply and demand, and monetary policy.
- 412 **ECON 412.**  
**Topics in Macroeconomics.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 402 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). Rackham credit requires additional work.*  
 Topics in macroeconomic theory including empirical studies and policy applications.
- 418 **ECON 418.**  
**Business Cycles.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 402 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). Rackham credit requires additional work.*  
 An examination of the factors which make for economic instability and of policies to promote stability. Major emphasis is placed on the postwar business cycle in the U.S. The approach is both theoretical and empirical.
- 421 **ECON 421.**  
**Labor Economics I.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). Rackham credit requires additional work.*  
 Analysis of the determination of the levels and distribution of skills, wages, employment, and income in a market economy. Applications of the theories of consumer choice, production, and investment in human capital to a wide range of real-world problems.
- 422 **ECON 422.**  
**The Structure of Labor Markets.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). Rackham credit requires additional work.*  
 Emphasis on institutional complications of labor markets such as trade unionism and discrimination. Intensive investigation of impact of policies concerning collective bargaining, equal opportunity, and unemployment.
- 431 **ECON 431.**  
**Industrial Organization and Performance.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). Rackham credit requires additional work.*  
 Theory and empirical evidence on the causes and effects of market power, especially in industrial markets. The focus on the relations between market structure and performance as a guide to policy formation.

- 432 **ECON 432.**  
**Government Regulation of Industry.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). Rackham credit requires additional work. II.*  
 Analysis of government policies aimed at maintaining desirable economic performance, especially antitrust regulation and public enterprise.
- 435 **ECON 435.**  
**Financial Economics.**  
 (4,4;4,4) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). ECON 404 or 405. Rackham credit requires additional work.*  
 An introduction to the economic analysis of financial markets and financial decision making. Asset pricing theory, net present value, arbitrage strategies, portfolio management, and financial market behavior. Case studies of current policy.
- 441 **ECON 441.**  
**International Trade Theory.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). Rackham credit requires additional work.*  
 The theory of international specialization and exchange; trade, tariffs, and welfare; and selected policy problems in international trade.
- 442 **ECON 442.**  
**International Finance.**  
 (4,4;4,4) : May not be repeated for credit.  
 (Excl).  
*ECON 402 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). Rackham credit requires additional work.*  
 The foreign-exchange market, balance-of-payments accounting, balance-of-payments adjustment, international investment, and selected policy problems in international finance.
- 451 **ECON 451.**  
**Comparative Analysis of Economic Systems.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401. No credit granted to those who have completed or are enrolled in ECON 350. Rackham credit requires additional work.*  
 Selected models, cases, and problems of various economic systems with different arrangements for ownership, resource allocation, and income distribution. Intended for students with a background in microeconomic theory.
- 453 **ECON 453.**  
**The European Economy.**  
 (4,4;4,4) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). Rackham credit requires additional work.*  
 A study of the European economy including economic growth, the Common Market, European relations with underdeveloped countries, East-West and trans-Atlantic trade relations, and the technological and managerial gap.

- 454 **ECON 454.**  
**Economics of Japan.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 101 and 102. Rackham credit requires additional work.*  
 An analysis of the development of the Japanese economy followed by a discussion of the post-war Japanese economic system and the prospects for the future.
- 455 **ECON 455.**  
**The Economy of the People's Republic of China.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 101 and 102. Rackham credit requires additional work.*  
 Analysis of economic organization, structure, system of planning, economic performance, and problems in China after 1949. The first third of the course is devoted to review of development before 1949.
- 456 **ECON 456.**  
**The Russian Economy.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 101 and 102. Rackham credit requires additional work.*  
 An economic analysis of the development of the Russian economy and its present structure, operation, and problems.
- 461 **ECON 461.**  
**The Economics of Development I.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). No credit granted to those who have completed or are enrolled in ECON 360. Rackham credit requires additional work.*  
 Survey of the historical and economic determinants of stagnation and growth in the underdeveloped countries. Emphasis is given to the role of economic analysis and techniques in the planning process.
- 462 **ECON 462.**  
**The Economics of Development II.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). ECON 360 or 461. Rackham credit requires additional work.*  
 The second of the two term sequence in economic development, following either ECON 360 or 461. Focuses on the applications of economic theory to several specific problems of policy and planning in underdeveloped countries.
- 466 **ECON 466.**  
**Economics of Population.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). Rackham credit requires additional work.*  
 An introduction to the economic approach to the study of human population growth. Its primary aim is to acquaint the student with changing trends in fertility, mortality, migration and family composition, and the implications of these trends for the economy.

- 467 **ECON 467.**  
**Economic Development in the Middle East.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 101 and 102. Rackham credit requires additional work.*  
 This course combines an analysis of the structure and performance of contemporary Middle Eastern economies with discussions of development issues of general interest. Issues considered in recent versions of the course include population problems, the oil industry, economic aspects of Islam, agricultural development, and international migration. Each issue is discussed both in general terms and in the institutional context of a specific Middle Eastern economy.
- 471 **ECON 471 / NRE 571.**  
**Environmental Economics.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-, or NRE 570; or graduate standing (Prerequisites enforced at registration). Rackham credit requires additional work.*  
 Economic analysis of market failures due to externalities and imperfect transmission of information and of normative recommendations for efficient government intervention to correct the market failures. Positive analysis of government behavior creating and implementing policies for air pollution, water pollution, hazardous wastes and occupational health. The course includes a computer simulation of river pollution, where teams of students assume the role of the Water Basin Authority.
- 476 **ECON 476 / CAAS 457.**  
**Political Economy of Black America.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl). (R&E).  
*ECON 101. CAAS 201 recommended. Rackham credit requires additional work.*  
 Focuses on the economic life of African Americans in the U.S., including the role of economics in the social construction of race, and the relationship between the evolution of the U.S. economy and the changing status of African Americans.
- 481 **ECON 481.**  
**Government Expenditures.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). No credit granted to those who have completed or are enrolled in ECON 380. Rackham credit requires additional work.*  
 Normative theory of public expenditures, expenditure decision-making processes, historical trends and determinants of government expenditures, benefit-cost analysis and other techniques of program evaluation, and intergovernmental fiscal relations.
- 482 **ECON 482.**  
**Government Revenues.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). No credit granted to those who have completed or are enrolled in ECON 380. Rackham credit requires additional work.*  
 Historical trends and determinants of government revenues, revenue decision-making processes, social objectives attainable with revenue instruments, and evaluation of major types of revenue (taxes, user charges, borrowing).
- 485 **ECON 485.**  
**Law and Economics.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). Rackham credit requires additional work.*  
 This course surveys the literature on economic analysis of the common law. Topics to be covered would include (1) property rights and the problem of the commons, (2) the economic efficiency of various approaches to tort (accident) law (such as negligence rules, negligence with contributory negligence bar, strict liability and comparative negligence), (3) economic analysis of contracts, (4) the properties of tax versus liability rule versus regulatory approaches to pollution control, (5) economic approaches to deterrence of crime, and (6) other topics.

- 487 **ECON 487.**  
**Urban Economics.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401. Rackham credit requires additional work.*  
 Economic aspects of urbanization; intra-metropolitan location decisions of households and firms; and analysis of land, housing, and transportation markets and of public policy in these areas.
- 488 **ECON 488.**  
**Urban and Regional Economics, II.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 487. Rackham credit requires additional work.*  
 Detailed examination of the interactions between the urban public sector and the urban economy. Externalities, pollution and congestion, zoning policies and the behavior of local government. Selected economic problems of the city.
- 491 **ECON 491 / HISTORY 491.**  
**The History of the American Economy.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 101 and 102. Rackham credit requires additional work.*  
 Covers American economic history from colonial times to the present, emphasizing the causes and consequences of economic growth, business cycles, and issues of economic equity.
- 492 **ECON 492.**  
**World Economic History.**  
 (3;3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). ECON 404 or 406. Rackham credit requires additional work.*  
 Examines the causes and consequences of world economic development. Topics include: the effects of the agricultural and industrial revolutions, law, global integration, and finance on economic growth and standards of living.
- 493 **ECON 493 / HISTORY 493.**  
**European Economic History.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 101 and 102. Rackham credit requires additional work.*  
 A survey of European economic history since 1000 A.D., with most emphasis on the determinants of economic growth in the eighteenth and nineteenth centuries.
- 496 **ECON 496.**  
**History of Economic Thought.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C- (Prerequisites enforced at registration). Rackham credit requires additional work.*  
 This course treats the development of economics from the origins to the present. The aim of the course is to deepen understanding of contemporary economic questions by examining how they have arisen and been answered and debated in the history of economic thought.

- 499 **ECON 499.**  
**Independent Research.**  
 (1-4,1-4;1-4,1-4) : May be repeated for credit for a maximum of 8 credits.  
 (Excl). (INDEPENDENT).  
*Consent of instructor (Prerequisites enforced at registration). Written permission of staff member supervising research, and permission of the economics concentration advisor. No more than four credits may be used in an economics concentration program. Rackham credit requires additional work.*  
 Student and instructor agree on a substantial piece of work involving reading or research. Evaluation is based on the written work, either papers or examinations.
- 501 **ECON 501.**  
**Microeconomic Theory.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401. Rackham credit requires additional work.*  
 A course designed for students in the MAE program. Basic models in the principal areas of microeconomic theory are covered: consumer demand, production and costs, product markets, factor markets, allocative efficiency, and corrections for market failure. Most of the course is spent studying the use of these tools in the analysis of specific microeconomic policy problems. Application of theory to current policy problems is stressed, and a substantial amount of class time is devoted to exercises based on such problems.
- 591 **ECON 591.**  
**Natural Resources Admin.**  
 (2-4,2-4;2-4,2-4) : May not be repeated for credit.  
 (Excl).  
*Rackham credit requires additional work.*  
 Examines processes of resource policy formation and administration, and the behavior of government institutions as they shape natural resource policies and management programs. Develops an analytic ability to disaggregate complex political and management situations, assess the feasibility of resource policy changes, and build strategy to get such changes adopted and implemented. Cases explore situations at the federal, state, and local levels.

### Undergraduate and Graduate Courses

- 405 **ECON 405 / STATS 405.**  
**Introduction to Statistics.**  
 (4,4;4,4) : May not be repeated for credit.  
 (Excl). (BS). (QR/1).  
*MATH 116. Juniors and seniors may elect this course concurrently with ECON 101 or 102. No credit granted to those who have completed or are enrolled in IOE 265, STATS 265, 400, or 412. Students with credit for ECON 404 can only elect ECON 405 for 2 credits and must have permission of instructor.*  
 The purpose of this course is to provide students with an understanding of the principles of statistical inference. Topics include probability, experimental and theoretical derivation of sampling distributions, hypothesis testing, estimation, and simple regression. (Students are advised to elect the sequel, ECON 406.)
- 409 **ECON 409.**  
**Game Theory.**  
 (4;4) : May not be repeated for credit.  
 (Excl). (BS).  
*ECON 401 with at least a C- (Prerequisites enforced at registration). MATH 217.*  
 Parlor games: nim, tic-tac-toe, hex, chess. Fixed points and equilibria. Zero-sum games. Chance and information. Poker. Coordination and cooperation. Bargaining. Evolution of cooperation.

- 414 **ECON 414.**  
**Growth Theory.**  
 (4,4;4,4) : May not be repeated for credit.  
 (Excl).  
*ECON 401 and 402 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration).*  
 The standard of living in a country is determined by its capacity to produce goods and services. Why are some nations richer than others? Why is there economic growth? Will it continue forever? What is the role of social infrastructure in shaping the economic success of a nation? This array of questions are addressed using the neoclassical and the new growth theory, as well as cutting-edge theories of talent allocation and economics of corruption.
- 430 **ECON 430.**  
**Business Abroad.**  
 (4;4) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration).*  
 Market structure, conduct, and performance when firms compete on a global basis. Emphasis is placed on the identification of those traits of national economic culture and policy which shape the behavior and performance of large-scale business enterprises. Most classes are conducted in discussion format.
- 434 **ECON 434.**  
**Corporate Financial Economics.**  
 (3;3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration). ECON 404 or 405. No credit granted to those who completed ECON 411 in Fall 2000, Winter 2001, or Fall 2001.*  
 Examines the economic and financial principles underlying corporate financial theory with an emphasis on corporate investment and financing decisions. Specific topics: time values of money, valuing debt and equity, net present value analysis, risk vs. expected return, Capital Asset Pricing Model, capital structure, dividend policy, mergers and acquisitions, and options.
- 438 **ECON 438 / HMP 661.**  
**Economics of Health Services.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-, or HMP 660; or graduate standing (Prerequisites enforced at registration). HMP 660, ECON 401, or PUBPOL 555.*  
 Application of economic analysis to the field of medical care. Use of economics to explain current developments in medical care, more effective use of resources, and predictions of changes in current situation.
- 457 **ECON 457.**  
**Post-Socialist Transition in Central/Eastern Europe and the Former Soviet Union.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 101 and 102.*  
 An introduction to current economics issues of post-socialist transition in formerly socialist countries. Topics of study include macroeconomics stabilization, price liberalization, international trade liberalization, privatization of formerly state-owned enterprises, and the restructuring of social welfare systems. Political factors of the transition are also emphasized.
- 472 **ECON 472 / NRE 583.**  
**Intermediate Natural Resource Economics.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-, or NRE 570; or graduate standing (Prerequisites enforced at registration).*  
 An intermediate level review of Natural Resource Economics. Topics include basic optimization techniques, resource scarcity, cost-benefit analysis, depletion of exhaustible resources, harvesting of renewable resources and common property problems.

- 483 **ECON 483 / POLSCI 482.**  
**Positive Political Economy.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 with a grade of at least C-; or graduate standing (Prerequisites enforced at registration).*  
 An introduction to positive political economy, analyzing political institutions and their impact on economic policies. The tools of game theory are used to analyze different voting mechanisms, legislative games, the bureaucracy, and interest groups, and to incorporate these political institutions into the analysis of issues such as income taxation and the provision of public goods.
- 486 **ECON 486.**  
**Law and Economics, II.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401.*  
 Like ECON 485, this course uses economic theory to analyze economic issues posed by legal rules. The topics covered include questions taken from contract law, law of corporations, mergers/takeovers, personal and corporate bankruptcy, and inter-state legal competition.
- 494 **ECON 494 / HISTORY 494.**  
**Topics in Economic History.**  
 (3,3;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 101 and 102.*  
 Study of issues in economic history with emphasis on a particular region of the world, a particular time period, or a topic of current interest. The specific topics vary with the faculty member teaching the course.
- 497 **ECON 497.**  
**Economic History of Japan.**  
 (3;3) : May not be repeated for credit.  
 (Excl).  
*ECON 101 and 102.*  
 Development of the Japanese economy during the 800 years preceding 1945. This course explores how, when, and why Japan's economic performance came to be markedly distinctive from the rest of Asia.
- 573 **ECON 573 / PUBPOL 573.**  
**Benefit-Cost Analysis.**  
 (4,4;3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 555 and permission of instructor.*  
 This course teaches students how to evaluate government programs. It covers the mechanics of benefit-cost analysis, how scarce or unemployed resources should be priced, the choice of a proper time discount rate, treatment of income distribution issues, environmental benefits, intergovernmental grants, and regulatory problems. An essential part of the course is a term project – each student selects a program and does a benefit cost evaluation of it.
- 592 **ECON 592.**  
**Natural Resources Admin.**  
 (2-4,2-4;2-4,2-4) : May not be repeated for credit.  
 (Excl).  
*ECON 571 and graduate standing.*  
 Provides an opportunity for advanced resource policy graduate students to discuss and analyze current topics and normative in the field. The course content will change annually to reflect new ideas and issues in resource policy and administration, and because two-thirds of the seminar sessions involve discussion of student prepared papers, the exact content of the course will vary from year to year.

677 **ECON 677 / STATS 531.****Analysis of Time Series.**

(3,3;3,3) : May not be repeated for credit.

(Excl). (BS).

STATS 426.

Decomposition of series; trends and regression as a special case of time series; cyclic components; smoothing techniques; the variate difference method; representations including spectrogram, periodogram, etc.; stochastic difference equations, autoregressive schemes, moving averages; large sample inference and prediction; covariance structure and spectral densities; hypothesis testing and estimation and applications and other topics.

**Graduate Courses**500 **ECON 500.****Quantitative Methods.**

(3,3) : May not be repeated for credit.

(Excl).

*Consent of instructor required (Prerequisites enforced at registration). Graduate standing. Permission of instructor required.*

This is a one-term introduction to the use of mathematical methods in economics. Five major topics covered are: functions (with an emphasis on convex functions), matrix algebra, differentiation and integration, optimization (static and intertemporal) and the basics of probability theory. Application of these techniques to practical problems in economics is stressed.

502 **ECON 502.****Applied Macroeconomics.**

(3,3) : May not be repeated for credit.

(Excl).

*ECON 402 and Graduate standing.*

A course designed for students in the MAE program. Approximately one-third of the course is spent reviewing and elaborating on standard macro theory of the sort covered in an advanced undergraduate course. The remainder of the time is spent on applications of this theory to problems of stabilizing aggregate demand, unemployment and inflation, economic growth, and macroeconomics of open economies. Students normally do a computer project involving hypothesis testing or model simulation.

503 **ECON 503.****Econometrics for Applied Economics.**

(3) : May not be repeated for credit.

(Excl).

*Graduate standing and permission of instructor. Prior coursework in calculus, introductory microeconomics and macroeconomics, and introductory statistics is recommended.*

An introduction to econometric methods and their use in policy analysis. Most of the course focuses on multiple regression analysis, beginning with ordinary least squares estimation and then considering the implications and treatment of serial correlation, heteroskedasticity, specification error, and measurement error. The course also provides an introduction to simultaneous equations models and models for binary dependent variables.

530 **ECON 530 / PUBPOL 530.****The Economics of Regulation.**

(3,3) : May not be repeated for credit.

(Excl).

*Microeconomics; calculus for social scientists. Graduate standing.*

This course gives an understanding of the economic issues and policy tools available in government regulation of business in the U.S. The economic reasons for regulation are discussed and contrasted with political explanations for existing regulations. Theoretical and empirical approaches are employed to assess the costs and benefits of regulation and deregulation.

540 **ECON 540 / PUBPOL 540.****International Economic Policy.**

(3,3) : May not be repeated for credit.

(Excl).

*PUBPOL 555. Presumes prior or concurrent knowledge of intermediate macroeconomics. Permission of instructor required.*

This course examines the policy issues of international economics. It covers the international implications of macroeconomic policies, international monetary arrangements and institutions, international trade policy, and relationships between the industrialized nations and the less-developed countries. This course presumes prior or concurrent knowledge of intermediate macroeconomics.

- 541 **ECON 541 / PUBPOL 541.**  
**International Trade Policy.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing. This course presumes a prior knowledge of intermediate economics.*  
 This course examines the policy issues of international trade, including trade in both goods and services and also international flows of direct investment and migration. It builds on microeconomic theory, first to examine the basic theories of international trade and factor movements, including the classic Ricardian theory of competitive advantages, the neoclassical factor proportions theory, and the New Trade Theories that incorporate increasing returns to scale, imperfect competition, and product differentiation. Empirical evidence and applications of the theories are addressed, including their applicability for less developed and emerging economies. Although the major emphasis of the course is on the microeconomics of international transactions, a portion of the course will also put this into macroeconomic context.
- 561 **ECON 561 / PUBPOL 561.**  
**Economic Development Policy.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*PUBPOL 542 and 555, Graduate standing, and permission of instructor.*  
 Which policies stimulate growth and development and which don't? This course is focused on developing a critical capacity for answering these questions. The material will integrate case studies and experiences from developing and transitional economies with economic theories drawn from the fields of microeconomics, macroeconomics and political economy.
- 571 **ECON 571 / PUBPOL 571.**  
**Applied Econometrics.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing. Familiarity with elementary calculus and statistics at the level of PUBPOL 529 is required. Permission of instructor required.*  
 This course is an introduction to econometric methods and their use in policy analysis. Most of the course focuses on multiple regression analysis, beginning with ordinary least squares estimation, and then considers the implications and treatment of serial correlation, heteroskedasticity, specification error, and measurement error. The course also provides an introduction to simultaneous equations models, time series analysis, models for binary dependent variables, and methods for longitudinal analysis.
- 572 **ECON 572 / PUBPOL 572.**  
**Policy Models.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 571 and Graduate standing.*  
 In this course we will study a number of topics in both the theory and application of Econometrics, with an emphasis on microeconomic issues. These topics fall roughly into three categories, Systems of Equations and Panel Data (Part I), Simultaneous Equations Models (Part II), and models with limited dependent variables (Part III).
- 574 **ECON 574 / PUBPOL 574.**  
**Advanced Quantitative Methods: Forecasting and Modeling.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 571 and Graduate standing.*  
 This course investigates various economic forecasting techniques, with a primary focus on econometric modeling. A sequence of modeling topics is addressed, including model specification, data issues, model estimation and evaluation, simulation of model systems and policy simulation experiments. Special attention is given to preparing, generating, and adjusting forecasts. Alternative forecasting techniques (e.g., leading indicators, time series models, and judgment) are also briefly considered. Other topics include comparative forecasting performance, forecast services, and the current outlook.

- 584 **ECON 584 / PUBPOL 584.**  
**The Economics of Public Education.**  
 (2-3,2-3) : May not be repeated for credit.  
 (Excl).  
*ECON 401 and Graduate standing.*  
 This course is an introduction to the economics of education. The central aim of the course is to assist students in viewing the education "industry" and its educational processes through the perspective of economics. Several tools of economic analysis are used to address the links between education and economic growth, consumption, investment, employment, and equity. You will be afforded an opportunity to examine an important issue related to the economics of education. This exercise will help students become more knowledgeable about the economics of education literature, and they will learn how to apply the tools of economic analysis to a important policy issue.
- 588 **ECON 588 / PUBPOL 588.**  
**The Urban Public Economy.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401. Graduate standing.*
- 599 **ECON 599.**  
**Special Tutorial.**  
 (1-3,1-3) : May not be repeated for credit.  
 (Excl). (INDEPENDENT).  
*Consent of instructor required (Prerequisites enforced at registration). Graduate standing and permission of instructor.*  
 Special topics course developed by individual faculty members and offered as requested.
- 600 **ECON 600.**  
**Math for Economists.**  
 (4) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor. Highly recommended for students taking ECON 601 and required for all Ph.D. students in Economics. I.*  
 This course offers an introduction to the mathematics used in contemporary economics. Topics covered include linear algebra and matrices, multivariable calculus, and optimization theory. The course also provides an introduction to differential and difference equations and dynamic programming. Students may place out of the course by exam. The course begins in late August, two weeks before the beginning of the Fall Term.
- 601 **ECON 601.**  
**Microeconomic Theory I.**  
 (1.5,1.5) : May not be repeated for credit.  
 (Excl).  
*ECON 600, Graduate standing and permission of instructor.*  
 Individual choice, classical demand theory, aggregation, and producer theory. It also includes topics in partial equilibrium analysis, competitive markets, externalities, Coase Theorem, and public goods.
- 602 **ECON 602.**  
**Microeconomic Theory II.**  
 (1.5,1.5) : May be repeated for credit.  
 (Excl).  
*Permission of instructor.*  
 This course covers the following topics during the half term: decision and strategic theory, choice under uncertainty, expected utility theory, Allais Paradox, subjective probability theory, and Ellsberg Paradox. Other topics included are dynamic consistency, Strotz, introduction to non-cooperative game theory, static and dynamic games of complete and incomplete information, and basic equilibrium concepts. Applications to market power in partial equilibrium are also covered.

- 603 **ECON 603.**  
**Microeconomic Theory III.**  
 (1.5,1.5) : May not be repeated for credit.  
 (Excl).  
*ECON 602.*  
 Topics covered are those surrounding classical general equilibrium. This area covers pure exchange and 2x2 production models, welfare analysis, the positive theory of equilibrium, and core convergence. It also includes study of general equilibrium under uncertainty, Arrow-Pratt risk aversion, risk comparisons, sequential trade, asset markets, and incomplete markets as well as other topic in general equilibrium.
- 604 **ECON 604.**  
**Microeconomic Theory IV.**  
 (1.5,1.5) : May not be repeated for credit.  
 (Excl).  
*ECON 603.*  
 Information and incentive economics, incentive adverse selection, signalling, and screening. Also addressed are the principal-agent model, introduction to contract theory, social choice theory, Arrow's theorem, social welfare functions, axiomatic bargaining, and mechanism design.
- 605 **ECON 605.**  
**Macroeconomic Theory I.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 600. Graduate standing.*  
 Begins with an overview of aggregate income determination. It continues with an in-depth treatment of dynamic models: the Solow, neoclassical, and new growth models. The course proceeds with an introduction to rational expectations models and techniques with application to output determination and price adjustment in closed and open economies.
- 607 **ECON 607.**  
**Macroeconomic Theory II.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 600. Graduate standing.*  
 Addresses topics that include models of aggregate supply and business cycles (rational expectations, new Keynesian, real business cycles, coordination failure and multiple equilibrium), money supply and demand, investment and consumption demand and their relationship to financial markets, and fiscal and monetary policy. The primary emphasis of the course is on understanding different models, their interrelationship, and empirical evidence, but new analytic tools are developed and applied as needed.
- 608 **ECON 608.**  
**Advanced Theory II.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 601, 603, 605, and 653. Graduate standing.*  
 This course is a macroeconomic theory course for doctoral students. Topics covered vary with the individual instructor.
- 609 **ECON 609.**  
**Advanced Mathematical Models for Macroeconomics.**  
 (1.5,1.5) : May not be repeated for credit.  
 (Excl).  
*Graduate standing; ECON 600.*  
 Covers advanced methods in optimal control, dynamic programming, monotone comparative statics and von Neumann-Morgenstern decision theory, preservations of properties under expectations and maximization, Boyd's symmetry theorem, and convex cone methods. The course emphasizes developing an intuitive understanding of the methods by proof-sketches, solved examples, and proplem sets rather than fully formal proofs.

- 610 **ECON 610.**  
**Stochastic Dynamic Optimization in Economics.**  
 (1.5,1.5) : May not be repeated for credit.  
 (Excl).  
*ECON 600; graduate standing.*  
 This course studies optimal stochastic dynamic optimization in both discrete and then continuous time. The focus is on optimal stopping and control. The discrete time theory explores discounted, positive, and negative stochastic dynamic programming with applications to gambling, search theory, and multi-armed bandits. The continuous time portion first develops the math underlying Brownian motion, diffusions, Ito integrals, stochastic boundary value problems, and stochastic differential equations. It then investigates optimal stopping, smooth pasting, and optimal stochastic control. Applications to irreversible decision making in investment, exchange rate target zones, learning and R&D, and options are considered.
- 611 **ECON 611.**  
**Stabilization Policy.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 602 and 604; 611. Graduate standing.*  
 This course deals with recent developments in macroeconomic theory. Particular attention is given to the application of the techniques of optimal control to Real and New Keynesian business cycle theory. Other likely topics include New Keynesian foundations, imperfect competition macroeconomics, q-theory, monetary and financial theory, growth theory, efficiency wages, Ricardian equivalence, precautionary saving, and Stochastic optimization.
- 612 **ECON 612.**  
**Stabilization Policy.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 611. Graduate standing.*  
 This course examines selected issues in macroeconomics and monetary economics. The aim is to teach how theory, data, and econometric and historical analysis are used to study the behavior of the economy at the aggregate level. In recent years, topics covered have included theories of consumption and investment, the relationship between economic activity and asset markets, the determinants of labor supply in aggregate, theories and empirical analysis of the business cycle, and issues in open-economy macroeconomics.
- 617 **ECON 617.**  
**Game Theory.**  
 (3,3) : May be repeated for credit.  
 (Excl).  
*ECON 600, 601, 602, 603, 604, and 609.*  
 An advanced game theory course. Topics include: solution concepts (iterated dominance, rationalizability, Nash equilibrium, subgame perfection, sequential equilibrium), infinitely repeated games (dynamic programming, self-generation, stick-and-carrot punishments, renegotiation, folk theorems), evolutionary game theory (evolutionary stable strategies, replicator dynamics, adaptive play), games with incomplete information (revelation principle, single crossing property, mechanism design), and implementation theory (social choice functions, voting schemes, implementation in dominant strategies and Nash equilibrium). Many examples illustrate these concepts: Vickrey auctions, signalling games, entry-deterrence, bargaining models, oligopolistic supergames, optimal auction design, and nonlinear pricing.
- 618 **ECON 618.**  
**Advanced Theory.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 600, 601, 602, 603, 604, and 609.*  
 This course covers game theory and uncertainty theory. These areas include fundamentals, risk, monotone comparative statics, Bayesian analysis, monotone signal orders, Blackwell's theorem, the demand for information and financial timing. The course also addresses search theory, wage and price search, non-price search, and search-theoretic matching and trading markets. Topics also include Bayesian learning, informational herding, social learning, optimal experimentation, optimal stopping, bandits, and dynamic demand for information.

- 619 **ECON 619.**  
**Advanced Theory I.**  
 (1.5,1.5) : May be repeated for credit.  
 (Excl).  
*ECON 600.*  
 Current focus is on information economics, including informational herding, optimal learning, and experimentation (including models of informational herding, financial timing, and informational demand). We also explore dynamic search-matching models.
- 620 **ECON 620.**  
**Advanced Theory II.**  
 (1.5,1.5) : May be repeated for credit.  
 (Excl).  
*ECON 600. Permission of instructor.*  
 Focuses mostly on axiomatic theories of decision making under risk and uncertainty. We first study classical theories of decision making under risk and uncertainty: von Neumann and Morgenstern, Anscombe and Aumann, and Savage. After this we study a selection of topics that are closer to the research frontier. These topics may include: (i) Ellsberg Paradox, ambiguity aversion, Schmeidler and Gilboa and Schmeidler representations, and applications of these representations; (ii) probabilistic sophistication and non-expected utility models; (iii) Dynamics, Bayesian updating, dynamic consistency, recursive expected utility; (iv) Unforeseen contingencies, and applications.
- 621 **ECON 621.**  
**Labor Economics I.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 601, 603, 673, 674; and Graduate standing.*  
 Develops theoretical models of the labor market, presents related empirical research, and discusses policy application. Topics include labor supply, labor demand, market equilibrium and compensating wage differentials, investment in human capital, and cyclical unemployment.
- 622 **ECON 622.**  
**Labor Economics II.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 601, 603, 673, & 674; and Graduate standing.*  
 This course presents recent research on a number of labor-market topics, with some emphasis on questions that are related to government policies and/or that have generated a significant empirical literature. Likely topics include labor unions, minimum wage laws, compensation policies and productivity, wage indexation, and discrimination and equal-opportunity laws.
- 631 **ECON 631.**  
**Industrial Organizations and Public Policy.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 601 and 603 and Graduate standing.*  
 The focus of this course is on theoretical analysis of behavior in markets. The main emphasis is on how firms compete with one another, and secondary emphasis is placed on organizational behavior and how firms interact with consumers. In recent years topics have included: price discrimination, oligopoly theory with and without differentiated products, strategic trade, mergers, markets with imperfectly informed participants, entry deterrence, predation, collusive behavior, cartel behavior, research and development competition, and the sale or rental of durable goods. Non-cooperative game theory is the predominant tool of analysis and is developed as needed during the course.

- 632 **ECON 632.**  
**Industrial Organizations and Public Policy.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 674, 674, and 631; and Graduate standing.*  
 This course emphasizes antitrust policy, regulation, and public enterprise particularly in the U.S. Antitrust is the primary focus; its three main parts include the treatment of established market dominance, of mergers, and of collusion and unilateral actions against competitors. Utility regulation includes controls of prices and investment, with various side-effects on efficiency and investment policies. Deregulation is also discussed at some length. There may be coverage of social regulation, weapons buying, patents and other special cases, in addition to public enterprise.
- 641 **ECON 641.**  
**International Trade Theory.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 601 and 603. Graduate standing.*  
 This course deals with the microeconomic aspects of international economics. Specific topics covered include theories of international specialization and exchange, trade policy and economic welfare, international factor movement, trade and growth, under both perfect competition and imperfect competition, and selected problems of trade policy in the international trading system. For most topics, both theoretical and empirical results from the literature are examined.
- 642 **ECON 642.**  
**International Finance.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 605 and 607. Graduate standing.*  
 This course covers various topics in international finance and macroeconomics. Topics covered include exchange rate prediction, monetary exchange rate models and their building blocks, the international effects of monetary policy, international real business cycle models, risksharing and portfolio diversification, risk and volatility in foreign exchange markets, fixed exchange rate models for small open economies and stabilization programs.
- 657 **ECON 657.**  
**History of Economic Thought, I.**  
 (3,3) : May not be repeated for credit.  
 (Excl). (INDEPENDENT).  
*ECON 401-402. Graduate standing.*  
 An independent study, reading-tutorial class that concentrates on the major classical economists and the relationship of classical economic to the society, politics, philosophy, and problems of its time,
- 658 **ECON 658.**  
**History of Economic Thought, II.**  
 (3,3) : May not be repeated for credit.  
 (Excl). (INDEPENDENT).  
*ECON 401-402. Graduate standing.*  
 An independent study, reading-tutorial class deal with the development of modern economics and its political, ideological and historical setting.
- 659 **ECON 659.**  
**Comparative Economics Systems I: System Models.**  
 (3,3) : May be repeated for credit.  
 (Excl).  
*ECON 401-402. Graduate standing.*  
 This course offers an overall survey of various issues and approaches to the historical process of the post-socialist transition and economic development. It consists of six parts: 1) the origin of socialism; 2) theoretical and empirical analysis of the former socialist systems; 3) major tasks of transition and reform measures; 4) transition as a process of economic development; 5) transition as a large scale institutional change; 6) recent country experience of transition.

- 660 **ECON 660.**  
**Comparative Economic Systems II: Topical Analysis.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 401-402. Graduate standing.*  
 This sequel to ECON 659 is to introduce students to frontier research in the economics of transition. Topics vary from year to year, following the latest research issues. The general areas include: 1) theories of property rights and ownership with lessons from transition; 2) mechanisms of institutional change, including the changing incentive and behavior of governments; 3) latest problems in transition economies; and 4) comparisons of alternative market systems, including the U.S.-Japan comparison.
- 661 **ECON 661 / NRE 668.**  
**Advanced Natural Resources Economics.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 501 or 601, 653 and 654; and permission of instructor.*  
 This course reviews the literature on the pricing of natural resources (agricultural goods, renewable and nonrenewable resources and durables) over time. The first half of the course considers resources which are privately owned; the second half considers resources that are common property. Policies analyzed include: bufferstocks used to affect prices (ceilings, floors, bands, and pegs); bans, embargoes, price controls and whatever else is timely or of interest to participants. To simplify the mathematics, discrete-time methods are used predominately.
- 662 **ECON 662 / NRE 669.**  
**Environmental Economics.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 501 or 603, 653.*  
 In the presence of pollution externalities, market allocations are typically inefficient and corrective government regulation may be desirable. This course first reviews solutions favored by economists, namely Pigovian taxes, tradable pollution permits, and judicial remedies, but then points out various real-world informational, technological, and political constraints that make such solutions difficult or impossible to implement in practice. The course then focuses on optimal interventions in the presence of these real-world constraints. Topics discussed are likely to include (1) optimal regulation when firms possess more information about compliance costs than regulators; (2) optimal enforcement of regulations when monitoring is costly; (3) non-market methods of measuring environmental and resource values; and (4) the interrelationship of environmental issues and international trade.
- 663 **ECON 663 / HISTORY 622.**  
**Topics in World Economic History, I.**  
 (3) : May be repeated for credit.  
 (Excl).  
*ECON 401 and 402. Graduate standing.*  
 This course will cover the evolution of economic institutions and the role of these institutions in the economic growth of Europe, Latin America, Asia and the United States. Topics include: The divergence of Asian and European growth rates between 1500 and 1800. The creation of modern fiscal and monetary institutions. The role of stock markets, banking systems and exchange rate regimes in historical economic development. Particular attention will be paid to the Great Depression and historical banking panics, stock market crashes and exchange rate devaluations. The course will explore the historical costs and benefits of the different monetary and fiscal institutions adopted by Europe, Argentina, Brazil, China, Japan, The United States, and Canada.
- 664 **ECON 664 / HISTORY 623.**  
**Topics in World Economic History, II.**  
 (3) : May be repeated for credit.  
 (Excl).  
*ECON 401, 402, and 405; graduate standing.*  
 This class introduces students to a variety of topics in the economic history of the world. The class is largely student driven and seminar in format. New topics are added each year. Students are encouraged to introduce topics from around the world.

- 665 **ECON 665.**  
**Economic Development of Underdeveloped Countries.**  
 (3,3) : May be elected more than once for credit.  
 (Excl).  
*Graduate standing.*  
 This course examines microeconomic issues in economic development, focusing on modeling approaches and empirical applications. Topics include household decision-making, including risk-coping strategies, technology adoption, migration, intra-household economics, and health and nutrition; and rural institutions such as sharecropping, interlinked contracts, land tenure arrangements, group-lending and rotating credit schemes, and public employment projects for the poor.
- 666 **ECON 666.**  
**Economic Development of Underdeveloped Countries.**  
 (3,3) : May be repeated for credit.  
 (Excl).  
*ECON 665.*  
 Advanced topics in development economics, including theoretical models of agricultural household labor supply, consumption, and production; policies regarding taxation, public expenditure, migration, population, and trade; theoretical and empirical analysis of income distribution.
- 667 **ECON 667.**  
**The Economics of Population Growth.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing.*  
 Reviews current knowledge on the relationship between economic and demographic behavior. Major sections of the course are: Economic theories of fertility, marriage, and divorce; economic applications of mathematical demography; economic consequences of population growth; economics of population policy.
- 668 **ECON 668.**  
**Economics of Western Europe.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 501, 502, and 571. Graduate standing.*  
 The structure and performance of the Western European economics since World War II. Emphasis is placed on using international comparisons to evaluate the effects of governmental policies and national cultures on the behavior of firms and households.
- 669 **ECON 669.**  
**Economy of Japan.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 501, 502, and 571; graduate standing.*  
 Structure and performance of the Japanese economy during the past 100 years. Particular emphasis is placed on the microeconomic analysis of distinctive Japanese corporate, government, and household institutions. Post-1945 Japanese economic performance is set within the context of changing global comparative advantage.
- 671 **ECON 671 / STATS 505.**  
**Econometric Analysis I.**  
 (3,3) : May not be repeated for credit.  
 (Excl). (BS).  
*Graduate standing and permission of instructor.*  
 ECON 671 and 672 form the basic required sequence in econometrics for all doctoral students. Their purpose is to provide Ph.D. students with the training needed to do the basic quantitative analysis generally understood to be part of the background of all modern economists. This includes: the theory and practice of testing hypotheses, statistical estimation theory, the basic statistical theory underlying the linear model, an introduction to econometric methods, and the nature of the difficulties which arise in applying statistical procedures to economic research problems.

- 672 **ECON 672.**  
**Econometric Analysis II.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 671.*  
 ECON 671 and 672 form the basic required sequence in econometrics for all doctoral students. Their purpose is to provide Ph.D. students with the training needed to do the basic quantitative analysis generally understood to be part of the background of all modern economists. This includes: the theory and practice of testing hypotheses, statistical estimation theory, the basic statistical theory underlying the linear model, an introduction to econometric methods, and the nature of the difficulties which arise in applying statistical procedures to economic research problems.
- 675 **ECON 675.**  
**Applied Microeconometrics.**  
 (3) : May be repeated for credit.  
 (Excl).  
*Consent of instructor required (Prerequisites enforced at registration). ECON 672; and permission of instructor.*  
 The purposes of this course are (1) to discuss types of econometric models likely to be useful in dissertation (and subsequent) research and (2) to provide some practical experience in applied economic research. Topics vary from year to year, but they typically include models for discrete and limited dependent variables and methods for analysis of longitudinal data.
- 676 **ECON 676.**  
**Applied Macroeconometrics.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 671 and 672; Graduate standing.*  
 The aim of this course is to equip students with a working knowledge of important econometric techniques used in monetary economics, financial economics, international economics, and econometric theory. The centerpiece of this course is the vector auto-regressive model. The course is divided into six parts: (1) a review of the foundations of time series econometrics; (2) detrending models: restricted and unrestricted estimation of stationary vector auto-regressive and moving-average methods: asymptotic, bootstrap and Bayesian inference; model selection and specification tests, forecasting; exogeneity and Granger causality; tests of forecast encompassing and tests of equal forecast accuracy; impulse response analysis, variance decompositions and historical decompositions; (3) estimation and inference in the presence of trends, structural change and unit roots in univariate models; (4) spurious regressions, unbalance regressions and cointegration; (5) identification problems and the relationship between structural and reduced form models; and (6) estimation and inference for structural dynamic macroeconomic models and their relationship to vector auto-regressive models.
- 678 **ECON 678 / STATS 575.**  
**Advanced Econometrics I.**  
 (3,3) : May not be repeated for credit.  
 (Excl). (BS).  
*ECON 671, 672, and 600.*  
 A course in econometric theory stressing the statistical foundation of the general linear model and the asymptotic distribution theory of nonlinear models. The course involves a development of the required theory in mathematical statistics and derivations and proofs of the main results associated with statistical inference in econometric models. Asymptotic distribution theory is studied in some detail.
- 679 **ECON 679 / STATS 576.**  
**Advanced Econometrics II.**  
 (3,3) : May not be repeated for credit.  
 (Excl). (BS).  
*ECON 678.*  
 Takes up from ECON 678. Includes a thorough treatment of statistical problems in econometrics, cross section data, times series data, panel data, development of simultaneous equation techniques, generalized method of moments, and formulation and estimation of special models. Selected current research topics depend on time and interest.

- 683 **ECON 683.**  
**Government Expenditures.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 601. Graduate standing.*  
 Emphasizes theory and evidence on government expenditure policy. Topics covered include the theory of public goods, state and local public goods, welfare economics and income distribution, political economy and voting mechanisms, and the design and evaluation of social insurance programs.
- 684 **ECON 684.**  
**Government Revenues.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 601. Graduate standing.*  
 Provides a positive and normative analysis of alternative government revenue sources. The first part of the course explores theoretical analyses of the incidence, efficiency costs, and distributional effects, of alternative tax systems. The rest of the course examines the implications of existing tax law in the U.S., and commonly proposed revisions in the law, for the allocation of resources in the economy.
- 695 **ECON 695.**  
**Introduction to Economic Research I.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 This course is designed to introduce third-year students to "how to do economic research." Students will be required to produce a polished research paper by the end of the course which can be incorporated into their thesis. Some class time will focus on topics such as bibliographic methods, data analysis, and economic modeling, but most of the effort will be involved in writing the research paper.
- 696 **ECON 696.**  
**Introduction to Economic Research II.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 This course is designed to introduce third-year students to "how to do economic research." Students will be required to produce a polished research paper by the end of the course which can be incorporated into their thesis. Some class time will focus on topics such as bibliographic methods, data analysis, and economic modeling, but most of the effort will be involved in writing the research paper.
- 700 **ECON 700.**  
**Research.**  
 (1-6,1-6) : May not be repeated for credit.  
 (Excl). (INDEPENDENT).  
*Consent of instructor required (Prerequisites enforced at registration). Permission of graduate advisor. Graduate standing.*  
 Particular topics course developed by individual faculty member and offered as requested.
- 739 **ECON 739 / PUBPOL 747.**  
**Topics in International Economic Policy.**  
 (2-4,2-4) : May be repeated for credit. May be elected more than once in the same term.  
 (Excl).  
*PUBPOL 542 and Graduate standing.*  
 This course is taught as two separate half-term seminars. Students may take one or both miniseminars. This course begins with a detailed look at the various empirical methods for analyzing trade policies. This is followed by a technical exercise in which all students perform an analysis of an assigned policy and produce a short policy memo their results. The course then turns to an examination of a series of trade policy episodes that are of current interest. Recent topics have included crisis management in the Asian financial and foreign exchange markets and issues of economic and monetary unification in the European Union.

- 745 **ECON 745.**  
**Seminar in Economics of Communist China.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing. Permission of instructor required.*  
 Post-revolutionary economic history and an analysis of contemporary economic institutions and the post-Maoist-era economic reforms. The development/comparative economic systems focus will allow students to critically examine the claim of China's political leadership to be constructing "socialism with Chinese characteristics."
- 751 **ECON 751.**  
**Computational Macroeconomics.**  
 (1.5,1.5) : May be repeated for credit for a maximum of 5 credits.  
 (Excl).  
 This course is an introduction to computational analysis of dynamic macroeconomic models and it is based on practical exercises. Methodologically, the analysis in most of the course is carried out using an undetermined coefficients method, applied to the linearized first-order conditions. This analysis also involves calibration of the relevant models as the solution to a set of steady-state equations, and the computation of impulse response functions and second moments of the model's variables.
- 752 **ECON 752.**  
**Growth and Inflation.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 602, 604, 653, 654; graduate standing.*  
 Selected topics in the general area of economic dynamics: e.g., growth, inflation, business cycles, stability of equilibrium, optimization over time.
- 754 **ECON 754.**  
**Theory of Financial Markets.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 601, 603, 653, and 654 or their equivalents. Graduate standing.*  
 This is an advanced course in financial economics. It reviews individual behavior under uncertainty and then examines several models of financial markets including CAPM, APT, Arrow-Debreu, incomplete markets, markets in continuous time, option, and markets for contingent claims. The course also covers recent work involving asymmetric information and market equilibrium.
- 755 **ECON 755.**  
**Topics in Advanced Theory.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 601, 603, 653, and 654 or their equivalents; and Graduate standing.*  
 Advanced microeconomic and macroeconomic theory courses. Topics covered depend on the current interests of students and faculty. In the past, these courses have covered a wide variety of topics, including theories of imperfect markets, duopoly, game theory, bargaining behavior of the firm, political economy, learning of capital and income distribution, general equilibrium, welfare economics, the economics of uncertainty, and law and economics.
- 758 **ECON 758.**  
**Advanced Topics – Radical Political Economics.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The seminar in Radical Political Economic Theory is devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate student, a University of Michigan faculty member, or a faculty member visiting from another university.

- 761 **ECON 761.**  
**Readings in Economic History.**  
 (1-4,1-4) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 Study of issues in economic history with emphasis on a particular region of the world, a particular time period, or a topic of current interest. The specific topics vary with the faculty member teaching the course.
- 771 **ECON 771 / PUBPOL 771.**  
**Tax and Federalism Issues.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing. Permission of instructor required.*
- 772 **ECON 772 / PUBPOL 772.**  
**Topics in International Economic Policy.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing, PUBPOL 542 and permission of instructor.*  
 This course is taught as two separate half-term seminars. Students may take one or both miniseminars. Recent topics have included crisis management in the Asian financial and foreign exchange markets and issues of economic and monetary unification in the European Union.
- 773 **ECON 773 / PUBPOL 773.**  
**Canadian Economic Issues.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*
- 777 **ECON 777 / PUBPOL 777.**  
**State and Local Public Finance.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 555; Graduate standing and permission of instructor.*
- 795 **ECON 795 / REES 795 / HISTORY 795 / POLSCI 795 / GEOG 795 / RUSSIAN 795.**  
**Research Seminar in Russian and East European Studies.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Consent of instructor required (Prerequisites enforced at registration). Graduate standing and permission of instructor.*  
 A research seminar on topics in Russian and East European Studies.
- 798 **ECON 798.**  
**Topics in Marxist Economic Theory.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The seminar in Marxist Economic Theory is devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate student, a University of Michigan faculty member, or a faculty member visiting from another university.

- 811 **ECON 811.**  
**Seminars in Monetary Theory.**  
 (2,2) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The Seminars in Monetary Theory are devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate students, a Michigan faculty member, or a faculty member visiting from another university.
- 812 **ECON 812.**  
**Seminars in Monetary Theory.**  
 (2,2) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The Seminars in Monetary Theory are devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate students, a Michigan faculty member, or a faculty member visiting from another university.
- 821 **ECON 821.**  
**Seminars in Labor Economics.**  
 (2,2) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The Seminars in Labor Economics are devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate students, a Michigan faculty member, or a faculty member visiting from another university.
- 822 **ECON 822.**  
**Seminars in Labor Economics.**  
 (2,2) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The Seminars in Labor Economics are devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate students, a Michigan faculty member, or a faculty member visiting from another university.
- 825 **ECON 825 / HISTORY 825 / ANTHCUL 825 / CHIN 825 / POLSCI 825 / SOC 825.**  
**Seminar in Chinese History and Society.**  
 (3,2) : May not be repeated for credit.  
 (Excl). (INDEPENDENT).  
*Either language knowledge (Chinese or Japanese) or HISTORY 351 or POLSCI 355. Graduate standing.*  
 A course for students working on special research projects in Asian history.
- 831 **ECON 831.**  
**Seminar in Applied Micro Theory.**  
 (2,2) : May be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*
- 832 **ECON 832.**  
**Seminar in Applied Micro Theory.**  
 (2,2) : May be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*

- 835 **ECON 835.**  
**Seminar in Natural Resource Economics.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The Seminars in Natural Resource Economics are devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate students, a Michigan faculty member, or a faculty member visiting from another university.
- 836 **ECON 836.**  
**Seminar in Natural Resource Economics.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The seminar in Natural Resource Economics is devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate student, a University of Michigan faculty member, or a faculty member visiting from another university.
- 841 **ECON 841.**  
**Research Seminar in International Economics.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 Faculty research currently in progress under the auspices of the Research Seminar includes such topics as: the future of the multilateral trading system; preferential trading arrangements; econometric analysis of trade and trade policies; international taxation, international finance, and international corporate behavior; economic reform and transition; international economic law and policy; and international political economy.
- 842 **ECON 842.**  
**Research Seminar in International Economics.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The seminar in International Economics is devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate student, a University of Michigan faculty member, or a faculty member visiting from another university.
- 851 **ECON 851.**  
**Advanced Economic Theory.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 This is not really a course at all, but a research seminar. Here you enjoy the best economic theory research that Ann Arbor money can buy from around the world. Students enrolled are encouraged not to be silent during the seminars, but to ask piercing questions that display deep understanding, as well as help the seminar speaker.
- 852 **ECON 852.**  
**Seminar in Advanced Economic Theory.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 Exposure to some fine papers on the frontiers of economic theory.

- 859 **ECON 859.**  
**Seminars in Comparative Economic Development.**  
 (2,2) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The Seminars in Comparative Economic Development are devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate students, a Michigan faculty member, or a faculty member visiting from another university.
- 860 **ECON 860.**  
**Seminars in Comparative Economic Development.**  
 (2,2) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The Seminars in Comparative Economic Development are devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate students, a Michigan faculty member, or a faculty member visiting from another university.
- 864 **ECON 864.**  
**Seminar in Economic History.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The seminar in Economic History is devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate student, a University of Michigan faculty member, or a faculty member visiting from another university.
- 865 **ECON 865.**  
**Seminars in Economic Development.**  
 (2,2) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The Seminars in Economic Development are devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate students, a Michigan faculty member, or a faculty member visiting from another university.
- 866 **ECON 866.**  
**Seminars in Economic Development.**  
 (2,2) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The Seminars in Economic Development are devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate students, a Michigan faculty member, or a faculty member visiting from another university.
- 867 **ECON 867.**  
**Seminar: Economics of Population.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 667/SOC 530 and Graduate standing.*  
 This is the training seminar for the Economic Demography Training Program housed at the Population Studies Center. The seminar covers a variety of topics in the form of (1) a detailed discussion of an important recent article or series of articles; (2) presentation of research plans or findings by trainees or faculty members; (3) presentation of research by a visitor.

- 868 **ECON 868.**  
**Seminar in Economics of Population.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*ECON 667/SOC 530 and Graduate standing.*  
 This is the training seminar for the Economic Demography Training Program housed at the Population Studies Center. The seminar covers a variety of topics in the form of (1) a detailed discussion of an important recent article or series of articles; (2) presentation of research plans or findings by trainees or faculty members; (3) presentation of research by a visitor.
- 875 **ECON 875.**  
**Research Seminar in Quantitative Economics.**  
 (3,3) : May not be repeated for credit.  
 (Excl). (INDEPENDENT).  
*ECON 673, 674; and Graduate standing. Permission of instructor required.*  
 RSQE is an economic modeling and forecasting unit which has been in operation at the University of Michigan since 1952. RSQE provides forecasts of the economic outlook for the U.S. and Michigan economies based on quarterly econometric models.
- 876 **ECON 876.**  
**Quantitative Economics Seminar.**  
 (3,3) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The seminar in Econometrics is devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate student, a University of Michigan faculty member, or a faculty member visiting from another university.
- 881 **ECON 881.**  
**Seminars in Public Finance.**  
 (2,2) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The Seminars in Public Finance are devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate students, a Michigan faculty member, or a faculty member visiting from another university.
- 882 **ECON 882.**  
**Seminars in Public Finance.**  
 (2,2) : May not be repeated for credit.  
 (Excl).  
*Graduate standing and permission of instructor.*  
 The Seminars in Public Finance are devoted to critical discussion of new research in the field. Each week an original research study is presented by a graduate students, a Michigan faculty member, or a faculty member visiting from another university.
- 990 **ECON 990.**  
**Dissertation/Precandidate.**  
 (1-8,1-4) : May be repeated for credit.  
 (Excl). (INDEPENDENT).  
*Election for dissertation work by doctoral student not yet admitted as a Candidate. Graduate standing. This course has a grading basis of "S" or "U."*  
 Election for dissertation work by doctoral student not yet admitted as a Candidate.
- 995 **ECON 995.**  
**Dissertation/Candidate.**  
 (8,4) : May be repeated for credit.  
 (Excl). (INDEPENDENT).  
*Graduate School authorization for admission as a doctoral Candidate (Prerequisites enforced at registration). This course has a grading basis of "S" or "U."*  
 Graduate School authorization for admission as a doctoral Candidate. N.B. The defense of the dissertation (the final oral examination) must be held under a full term Candidacy enrollment period.