

**GRADUATE MINOR IN ECONOMICS: A PROPOSAL**

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**Name of the Proposed Program: Graduate Minor in Economics****Program Administrator**

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**PROGRAM SUMMARY**

The Graduate Minor in Economics conforms to the Graduate School requirements for a Graduate Minor<sup>1</sup>.

Eligibility: An Ohio State University student already enrolled with good standing in a graduate program whose home department is not the Department of Economics.

Enrollment Procedure: A prospective student for the Graduate Minor in Economics must apply to the Economics Office of Graduate Studies (OGS), and must obtain the approval by the Director of Graduate Studies in Economics (DGS) of an academic plan that satisfies the Minor program.

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<sup>1</sup> II.7.9.4 Graduate Minors (OSU Graduate School Handbook).

- a. The Graduate Minor involves one program outside of a student's major graduate program. The Graduate Minor requires a minimum of 14 hours of graduate level course work in at least four courses.
- b. The student must receive a grade of B or better, or S, in each course comprising the Graduate Minor.
- c. The completed Graduate Minor will appear on the student's permanent record (transcript).

**Requirements:** A student must take at least 4 courses and earn at least 20 credit hours<sup>2</sup> from the set of graduate economics courses to be approved by the Economics DGS, and must earn a grade of B or better in each Economics DGS approved course. If a course allows a non-letter grade, the student must obtain approval from the Economics DGS prior to taking the course on the basis of Satisfactory (S)/Unsatisfactory (U) and must earn an S. No qualifier examination or field examination is required for the Graduate Minor in Economics; no part of the course requirements can be partially or wholly substituted for by a qualifier examination or field examination. Economics 893 (independent study), Economics 999 (Dissertation Research) and the Departmental Seminar/Workshop series are not admissible towards the Graduate Minor in Economics requirement.

**Transcript Designation:** Upon meeting the course and grade requirements, the “Graduate Minor in Economics” will be designated in the student’s official OSU transcript.

More detailed descriptions of the course requirements are given in the last section of this proposal.

### **PROGRAM RATIONALE: DEMAND FOR GRADUATE MINOR IN ECONOMICS**

Our enrollment history of the last two decades indicates that there apparently exists considerable interest among non-economics programs in graduate economics courses. That is, a potential demand exists for a graduate minor program in economics. Being a Ph.D. only program, however, we have not offered a curriculum that can effectively meet the needs of non-economics graduate students<sup>3</sup>. We wish to rectify this supply gap in our course menu by promulgating the Graduate Minor in Economics. The Graduate Faculty of the Department of Economics has hence charged the Director of Graduate Studies (DGS) to proceed with and promote the Graduate Minor in Economics.

The purpose of the Graduate Minor in Economics is to offer economics training that can complement non-economics students’ home programs. With the Graduate Minor in Economics, we hope that non-economics graduate students can acquire core concepts and methods in economic analysis so that they can access journal articles, working papers and graduate-level textbooks in the areas of their economic interest. From our perspective, we see benefits in three aspects. First and foremost, we can give better instruction and guidance when students can self-select into courses according to their similar motivations and backgrounds. Those interested in the Graduate Minor will receive material and delivery that meet their needs better than when they are mixed with economics Ph.D. students. Ph.D.

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<sup>2</sup> Every course in our program, except possibly Economics 893 (Independent Study) and Economics 999 (Dissertation Research), is a five credit-hour course; the minimum four courses translate into the minimum 20 credit hours.

<sup>3</sup> Since late 1980’s, in response to a need expressed by non-economics programs for a graduate minor field in economics, we have maintained in our program handbook, *Policies and Procedures for Graduate Study in Economics*, a clause that a graduate student not seeking a degree in economics can be certified as having met the requirements of economics as a minor “outside field” if the student enrolls in microeconomics core courses (Economics 804-805-808) and passes the microeconomic qualifier exam at the MA or Ph.D. level. Our stipulation in our handbook does not fit the Graduate School criteria for a graduate minor, and therefore, we have never issued a formal Graduate Minor in Economics, but have only provided a statement of certification by the Economics DGS addressed to a student’s home program DGS. As we explain below, in the last two decades this informal minor provision was rarely met by students who were in real need of economics training as a graduate minor. Since Economics 804-805-808 and qualifier exam constitute our Ph.D. core curriculum in microeconomics, they were technically too daunting for non-economics graduate students at large. Passing the Ph.D. core courses and microeconomics qualifier exam thus has been practically impossible for graduate students whose curricula do not substantially overlap with the economics Ph.D. curriculum.

core course instructors can also pitch their delivery without grave concerns about meeting the needs of those whose backgrounds and goals are not suited for a Ph.D. in economics. Second, the Graduate Minor gives us a platform to propagate the methodology and concepts used in economic research. Third, if there is a modest increase in non-economics graduates' subscription to economics, we may possibly increase our net enrollment revenue.

Several Ph.D. programs regularly recommend, and sometimes require, that their students take graduate economics courses to fulfill their "breadth" requirement<sup>4</sup>. Approximately 25 non-economics graduate students enroll in our core graduate courses in micro and macro economics every year from a dozen Ph.D. programs. Of those non-economics Ph.D. students who took our core graduate courses in the last two decades, students from only three programs have consistently scored course grades at a level on par with our Ph.D. students: the Department of Agricultural, Environmental and Development Economics (AEDEcon), the Department of Accounting and Management Information Systems (Accounting), and the Department of Finance. These three programs are closely allied with economics in methodology and research fields, and the technical orientation of their Ph.D. students is similar to those of our Ph.D. students<sup>5</sup>. Outside of these three Ph.D. programs, non-economics graduate students have generally found that the technical level and intensity of our graduate core courses are too demanding to fit in well with their home department programs. Yet, our upper-division undergraduate courses, even the honors quantitative track versions, are not sufficiently rigorous for non-economics Ph.D. students to acquire concepts and methods that are necessary for reading technical monographs, academic journals and graduate textbooks in economics<sup>6</sup>. In other words, we currently do not have courses that deliver the right mix of rigor, relevance and accessibility to graduate students whose background and goals are not closely aligned to those of our Ph.D. students. To translate their potential demand into effective demand, we plan to introduce six new 700-level graduate courses as an integral part of our proposed Graduate Minor in Economics. These new courses will not only offer fundamentals but also facilitate access to a dozen courses in our existing Ph.D. curriculum.

Before turning to the course description for the Graduate Minor in Economics, we would like to clarify the structure and modus operandi of our graduate program. We are a so-called Ph.D.-only program in the sense that we do not have a separate track dedicated to an M.A. program. All our graduate students are admitted directly into a five-year Ph.D. program from the start<sup>7</sup>, and our

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<sup>4</sup> For example, AEDEcon and Finance require their Ph.D. students to take our micro core sequence including its qualifier exams, and also recommend our macro core. Accounting recommends our micro core and its qualifier exams to their Ph.D. students. Several other graduate programs such as Public Policy, City and Regional Planning, Psychology, Political Science, and the College of Human Ecology have asked some of their Ph.D. students to enroll in our microeconomics sequence. We have also received inquiries in the last several years from Mathematics, Statistics, Physics, Electrical Engineering, Computer Science, Communication, Chemistry, the College of Education, and the College of Law as to how their students might pursue either a co-terminal degree or a Graduate Minor in Economics.

<sup>5</sup> As indications of our close metric to Finance and AEDEcon, our Ph.D. students may take the field of finance from the Department of Finance or the field of development economics from AEDEcon.

<sup>6</sup> To appreciate a quantum leap from a typical undergraduate program in economics, let us mention our discipline norm that a great majority of economics graduate students find it quite a challenge to absorb concepts, techniques and methods in the first year of Ph.D. courses.

<sup>7</sup> Our program structure is the discipline norm. Namely, competitive Ph.D. programs typically offer no *terminal* M.A. program in economics. In a few exceptional cases where a terminal M.A. program co-exists with a Ph.D. program, there is usually a firewall between them. Terminal M.A. courses do not substitute for first-year Ph.D. courses. Occasionally, a Ph.D. program may offer a terminal M.A degree in *applied* economics as a joint degree with another Ph.D. program. We do not have any such joint degree program.

curriculum has only Ph.D.-level courses. Our students obtain an M.A. in Economics *en route* to their Ph.D., typically at the end of the first-year curriculum, upon successfully passing qualifier exams in micro- and macroeconomics<sup>8</sup>. Any OSU graduate student can also obtain our M.A. by fulfilling the same set of course and exam requirements<sup>9</sup>. Specifically, to obtain our M.A. in Economics, a student must take 45 credit hours of our first-year Ph.D. courses with the average grade of at least B, and must pass both the micro and macro qualifier exams at least at the M.A. level<sup>10</sup>. Thus, the M.A. in Economics requires a distinctly higher level and greater scope of academic achievement than the Graduate Minor in Economics. The Graduate Minor in Economics is not a substitute for the M.A. in Economics; the scope and requirements of our M.A. remain unaffected by our Graduate Minor. We do not bind Graduate Minor students to taking only newly promulgated 700-level courses, but encourage them to try our Ph.D. courses as much as possible<sup>11</sup>. In this regard, there will be non-economics Ph.D. students who can successfully earn Graduate Minor credits by taking 20 hours of our Ph.D. courses, but who cannot afford taking 45 credit hours of our Ph.D. courses for the M.A. in Economics<sup>12</sup>.

We call the first-year Ph.D. courses in microeconomics (*micro*), macroeconomics (*macro*) and econometrics our *Ph.D. core*. Given the structure of our program, these Ph.D. core courses have been the only courses in our curriculum to teach the core concepts and methods at the graduate level. The goal of these core courses is to prepare our Ph.D. students for the micro and macro qualifier exams, advanced field courses, and their doctoral-level research. As a result, our first-year Ph.D. core courses are technically too rigorous and methodologically too highly specialized for non-economics graduate students. To have an effective graduate minor program, we need to introduce courses that are less technically demanding than our Ph.D. core courses, while retaining sufficient rigor and scope to cover the basics of graduate-level economic analysis.

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<sup>8</sup> This way of awarding M.A. is a part of the discipline norm for a Ph.D.-only program in economics, and should be appreciated in the context of attrition rates at the end of the first year. Even though our first-year students are selected from a large global application pool, the majority of them being fellowship students, the survival rate is around 75% at the end of the first year. The nontrivial attrition rate is also the discipline norm among nationally ranked Ph.D. programs in economics. Almost all students who separate at the end of the first-year still obtain M.A. in economics. This is because the assessment at the end of the first year is Ph.D. level pass, M.A. level pass and fail.

<sup>9</sup> Almost all of Ph.D. students in the AEDEcon program obtain our M.A. They and our own Ph.D. students constitute almost all M.A.'s that we have issued in the last 25 years. The AEDEcon's first-year Ph.D. program significantly overlaps with our own first-year curriculum.

<sup>10</sup> Our qualifier exams are graded as Ph.D.-level pass, M.A.-level pass, or Fail.

<sup>11</sup> A student cannot fulfill our M.A. requirements by taking a new 700-level graduate course that is designed for Graduate Minor students. Our M.A. requires that a student take our Ph.D. core courses and pass both micro and macro qualifier exams. Finally, in the proposed Economics Grad Minor, there is no qualifier exam required, and no qualifier exam can substitute a Grad Minor course requirement.

<sup>12</sup> The predominant majority of such students will be Ph.D. students in Accounting and Finance. Their home Ph.D. programs require that they complete our Ph.D. core sequence in microeconomics including its qualifier exam. But, their home programs do not require macroeconomics, hence their falling short of fulfilling our M.A. requirements. Their achievement hitherto could not have been officially recognized, but can now be entered in their transcripts as Graduate Minor in Economics. They have indeed been interested in our Graduate Minor program according to our annual surveys.

### **NEW 700-LEVEL COURSES FOR GRADUATE MINOR**

Non-economics graduate students have difficulty earning an average grade of B or better in our core Ph.D. courses<sup>13</sup>. The primary reason for their difficulty is that they generally lack the mathematical and statistical background to keep up with the technical orientation of our core Ph.D. courses. Given the structure of a typical graduate economics program, it is eminently sensible that a Graduate Minor in Economics focus on core material, namely micro theory, macro theory and econometrics. After a few core courses in the Graduate Minor program, students should be able to take some of the field courses in our Ph.D. program, especially the first courses in select fields<sup>14</sup>. Depending on their technical backgrounds, some of them may also be able take a few of our Ph.D. core courses.

To implement the Graduate Minor in Economics, we propose to introduce six new graduate courses in core concepts and methods at a level below the first-year core Ph.D. courses but strictly above the upper-division honors undergraduate economics courses. All economics courses are 5 credit-hour courses, as will be these new courses. Since almost all of our Ph.D. courses are numbered in the 800's, we have numbered these new graduate courses in the 700s.<sup>15</sup> The six new courses are Economics 702, 703, 704, 705 and 706 with the following contents and prerequisites.

**Economics 702 Survey of Econometric Methods I G5** Survey of fundamental methods and applications of econometrics from economists' viewpoint, covering essential aspects of linear regression and on a range of econometric topics in various microeconomics fields. Topics and emphasis may vary depending on the instructor. Prereq. Stat 154 (introductory statistics) and Math 571 (introductory linear algebra) or their economics course equivalent per instructor consent. Not open to students with credit in 741 or 742.

**Economics 703 Survey of Econometric Methods II G5** Survey of methods and topics in the econometrics of time series and panel data, with an emphasis on empirical examples in economics. Topics include stationary and nonstationary time series models, conditional heteroskedasticity and volatility, vector autoregression (VAR), cointegration, fixed and random effects models, and missing data. Prereq. 702 or equivalent per permission of instructor. Not open to students with credit in 741 or 742.

**Economics 704 Survey of Microeconomic Theory I G5** Survey of neoclassical economics, its methodology, scope and paradigm extensions: production, consumption, and competitive market equilibrium. Au Qtr. Prereq. 501, an intermediate microeconomics equivalent, or the

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<sup>13</sup> Again, exceptions are Ph.D. students in AEDEcon, Finance and Accounting. Note that the Graduate School regulation requires the minimum grade of B in each course counted towards a Graduate Minor.

<sup>14</sup> Our Ph.D. program offers eight fields, each field consisting of three or more courses, and, on average, approximately 25 field courses are offered in a given academic year. The eight fields can be grouped into microeconomics (4 fields: advanced theory, labor economics, industrial organization, public finance & urban economics), macroeconomics (2 fields: macro & monetary economics, international economics), econometrics (1 field) and economic history (1 field). See Appendix on Graduate Courses for more detail.

<sup>15</sup> The existing 700-level courses in our Ph.D. program are the mathematics for economics sequence Economics 700-701 and the core statistics-econometrics sequence Economics 740-741-742. An anomalous number exception is Economics 640, which has limited its enrollment eligibility to the first-year graduate students because it is a prerequisite to Economics 740. For a summary of graduate course offerings, see the Appendix on Graduate Courses.

instructor's consent. Not open to students with credit in the first course of a Ph.D. microeconomics curriculum such as 804.

**Economics 705 Survey of Microeconomic Theory II G5** Second course in the graduate level survey of microeconomic theory, with emphasis on economics of information and incentives. Topics include game theory, principal-agency models, moral hazard and adverse selection. Prereq. 704 or equivalent per instructor consent. Not open to students with credit in 805 or 808.

**Economics 706 Survey of Macroeconomic Theory I G5** Study of macroeconomic models of short-run fluctuations and business cycles with emphasis on monetarist models, real business cycle models and Keynesian models. Prereq. 502 (intermediate macroeconomics) or equivalent) or the instructor's consent. Not open to students with credit in the first course of a Ph.D. macroeconomics curriculum such as 806.

**Economics 707 Survey of Macroeconomic Theory II G5** Continuation of 706 (Macroeconomics I) and survey of new models of money, banking, unemployment, inflation, and economic growth. Prereq.: Economics 706 or equivalent per instructor consent. Not open to students with credit in Economics 807 or 809.

To summarize, these six 700 courses for the Graduate Minor are *middle-brow*<sup>16</sup> courses that are self-contained in core concepts and methods, but also open avenues to applied graduate fields in economics. They are pairwise grouped into in micro, macro and econometrics clusters.

#### Survey of Microeconomic Theory

- Economics 704 (5 credit hours): Survey of Microeconomic Theory I
- Economics 705 (5 credit hours): Survey of Microeconomic Theory II

#### Survey of Macroeconomic Theory

- Economics 706 (5 credit hours): Survey of Macroeconomic Theory I
- Economics 707 (5 credit hours): Survey of Macroeconomic Theory II

#### Survey of Econometric Methods<sup>17</sup>

- Economics 702 (5 credit hours): Survey of Econometric Methods I

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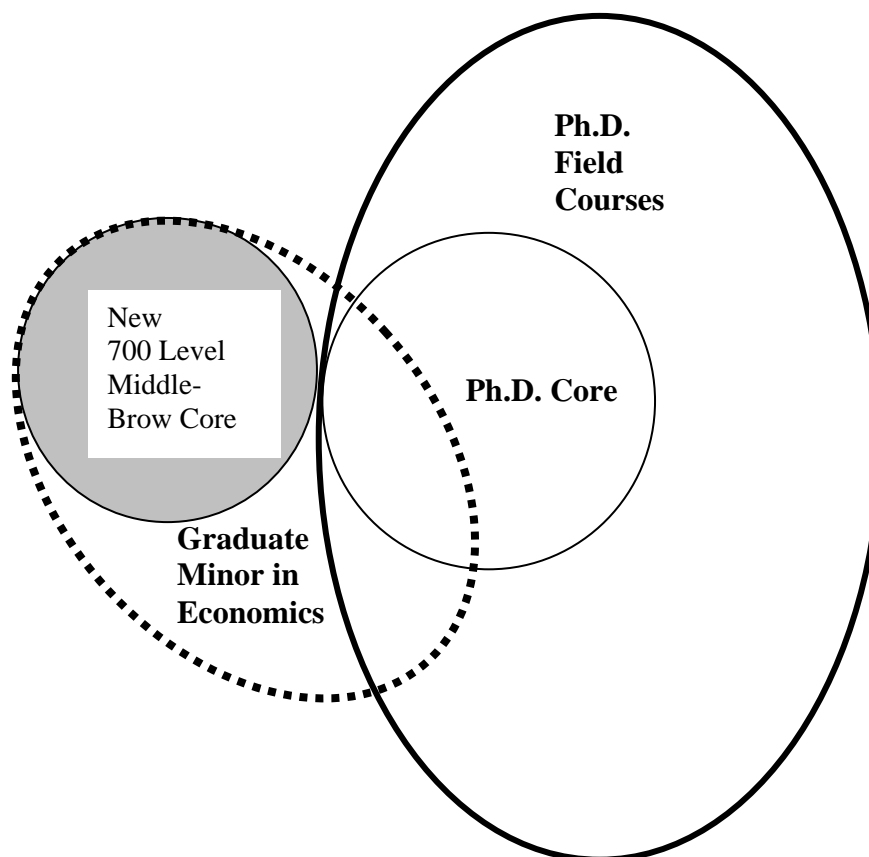
<sup>16</sup> Economists' casual classifications are high-brow, middle-brow and low-brow, depending on the technical level in which theoretical content and methodology are pitched. In our nomenclature, middle-brow theory means economic analysis that employs mathematics adequate enough to draw implications for, or to adapt to a special case from, a more general high-brow approach. In terms of classifying papers, we may also use "high brow" for pure theory, "middle brow" for applied theory, and "low brow" for purely empirical papers.

<sup>17</sup> Our econometrics program consists of the first-year core sequence that prepares students to acquire formal methods in econometrics. This is the sequence Economics 740-741-742 with Economics 640 (probability and statistics for economics) as a prerequisite preparation. Upper-division undergraduate courses in econometrics and statistics are assumed self-contained and not prerequisites for the core econometrics sequence. E702-703 as *Middle-brow* graduate econometrics courses will be less technical than the core econometrics courses, but will have a more accelerated survey of, and a more focused approach to, concepts and research methodology than upper-division undergraduate econometrics. The graduate econometrics core courses are oriented towards the econometrics theory using the formal mathematics of probability and statistics. Applied econometrics is taught as part of specific field courses other than the pure econometrics field. We call applied econometrics in labor economics "labor econometrics", in macroeconomics "macro econometrics", and in applied microeconomics "micro econometrics" etc. In other words, middle-brow econometrics is apt for a graduate economics minor.

- Economics 703 (5 credit hours): Survey of Econometric Methods II

Beyond these core courses, we do not plan to introduce any field courses specifically designed for the Graduate Minor in Economics. Students who have taken some of these new theory and econometrics core courses should be able to enroll in about a dozen first-courses in several of our Ph.D. field offerings<sup>18</sup>. We also accept as a fact that most non-economics Ph.D. students are only interested in a select set of field courses. Our curriculum innovation should enable non-economics graduate students (1) to read journal articles and the latest graduate textbooks, (2) to take some of our Ph.D. courses, and (3) to use their economics knowledge to complement their work in their home department programs. Our forecast is that heaviest demand will concentrate on the micro theory and the first macro theory at least in the initial few years. This is because micro theory, especially the first micro course, is considered the most fundamental to all economics fields and its applications are ubiquitous, extending even to macroeconomics and econometrics.

With the above curriculum innovations, the set of courses that can be applied to the proposed Graduate Minor in Economics becomes large and flexible. Schematic diagrams illustrating the curriculum structure are provided in the appendix section of this proposal. In addition, the appendix section contains the full list of approximately 35 Ph.D. level courses that are offered regularly every academic year. The Venn diagram below summarizes the Graduate Minor program in relation to the overall graduate program in economics.



<sup>18</sup> We have eight fields in our Ph.D. program, and each field consists of three or more field courses. Usually the first course of a given field is the most accessible.

### **PROGRAM ENROLLMENT CAP AND PERSPECTIVE**

Several graduate programs require their Ph.D. students to earn a Graduate Minor, or its de facto equivalent, in related fields. To estimate potential demand for our Graduate Minor, we have been taking annual surveys in our Math Camp<sup>19</sup>, which we run for our incoming Ph.D. students prior to the autumn quarter. All students planning to take our Ph.D. core courses attend the two-week intensive Math Camp. The surveys taken on its last day have repeatedly confirmed that the great majority of non-economics graduate students are enthusiastic about a Graduate Minor in Economics<sup>20</sup>. From the past pattern of subscription to our math camp and graduate courses, the new Graduate Minor program can anticipate enrollment of Ph.D. students from Political Science, Public Policy, City & Regional Planning, and Human Ecology. We also expect enrollment from programs that have previously inquired about our Graduate Minor in Economics: Mathematics, Statistics, Physics, Chemistry, Electrical Engineering, Computer Science, Communication, Chemistry, Psychology, Sociology, the College of Education and the College of Law. We have also received indications of interest from the School of Public Health, the College of Nursing, Demography and several graduate programs in the Fisher College of Business. While we have primarily focused our discussion on potential demand from Ph.D. students in other departments, we are aware that some students in their M.A. programs can probably take the Graduate Minor in Economics. For example, quantitatively-oriented students in the AEDEcon terminal M.A. program have shown interest in the Graduate Minor in Economics. Likewise, M.A. students in engineering, mathematics and statistics have contacted us regarding a graduate minor in economics. Our DGS will interview M.A. applicants before admission to the Graduate Minor in Economics.

We estimate that in the steady state there will be approximately 20 new students enrolling in the Graduate Minor in Economics every year. Since it may take students 4-5 quarters to complete the course requirements, and because we project a possible enrollment growth over the years, we put the reasonable maximum cap in annual enrollment at 40 students.

### **PROGRAM RESOURCES**

On the demand side it is unlikely that there will be high demand for all six of the new 700-level courses every year, especially in the first few years after inception. We are, however, certain that the first micro core course (E704) will generate the greatest and most solid demand as it teaches the basic tools and concepts that are prerequisite to all other graduate economics courses, including core macro courses and applied econometrics. We also expect that demand will be steady, within a year or two of promulgation, for macro (E706) and econometrics (E702), as they enable Graduate Minor students'

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<sup>19</sup> "Math Camp" is jargon for the intensive mathematics workshop for economics that we conduct for two weeks with 6 hour lectures and labs every day. Because the math camp is a de facto prerequisite for our core Ph.D. courses, it enrolls virtually everyone intending to take core courses regardless of home program discipline. Because we must notify several departments every year of the math camp schedule for their students' participation, we have maintained a contact network, which we plan to rely on in propagating our Graduate Minor innovations.

<sup>20</sup> The only exception is Ph.D. students in AEDEcon; they pursue our M.A. in Economics *en route* to their own Ph.D.'s (cf. footnote 9). We conjecture that terminal M.A. students in AEDEcon can take interest in the Grad Minor in Economics. Also, see footnote 12.



access to applied field courses. We thus regard it imperative to offer E704 immediately and every autumn; we then wish to offer E706 and E702 every year. All Graduate Minor courses shall be taught by our graduate faculty, that is, either Rank M or Rank P faculty members. Given the demographic and recruitment structure of our regular faculty, we should be able to staff the Graduate Minor courses within the faculty billets we are currently authorized<sup>21</sup>. We therefore do not plan to hire additional faculty members, or to expand our facilities, for the purpose of implementing the proposed Graduate Minor program.

### **COURSE REQUIREMENTS IN GRADUATE MINOR IN ECONOMICS**

We turn now to the specifics of course requirements and admissible academic plans for the Graduate Minor in Economics. The appendix lists approximately 35 Ph.D.-level lecture courses in eight fields offered every year. All are above the proposed 700-level core concept and methodology courses<sup>22</sup>, but any of them can be used to satisfy the Graduate Minor in Economics requirements depending on the student's background, need and interest.

**Course Requirements:** Four graduate courses in economics, each with the grade of B or better, must be taken to satisfy the Graduate Minor in Economics. Two of the four courses must be core concept and methodology courses, and one of them must be chosen from the following set of five core microeconomic theory courses<sup>23</sup>:

Economics 704 Survey of Microeconomics I  
 Economics 705 Survey of Microeconomics II  
 Economics 804 Microeconomics I  
 Economics 805 Microeconomics II  
 Economics 808 Microeconomics III

The remaining three courses can be chosen from the 700-level courses in core concept and methodology as well as from approximately 35 lecture courses that comprise the Ph.D. core and field

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<sup>21</sup> In the absence of new regular faculty recruitment it is likely that some of our regular faculty will take up Graduate Minor course instructions by vacating their undergraduate course instructions. However, such substitution will be minimal for two reasons. First, we are recruiting new tenure-track faculty members annually. Second, given the natural rate of faculty leaves and research-grant buyouts, our graduate faculty is a human-capital collective with complementary slackness. Further, if the aforementioned instructional substitutions occur within our regular faculty, we do not fear that the quality of undergraduate instructions will decline. We have a pool of able lecturers who have consistently delivered very effective undergraduate instructions, and we are also augmented by approximately 70 GTAs who are well trained to assist in undergraduate instructional duties. Returns from past instructional evaluations indicate that independent GTA instructors and lecturers helped us maintain both enrollment and teaching effectiveness in undergraduate courses. We thus do not foresee a situation in which we must overextend our organizational capital in order to implement the proposed Graduate Minor in Economics.

<sup>22</sup> Apparent exceptions are three courses E613-614-615 in the economic history sequence and E730 in the public finance sequence as these four courses are designated for G (graduate) and UG (undergraduate). Our graduate students in these courses are given additional requirements to meet higher standards than undergraduates, sometimes accompanied by additional term paper requirements via E893 (independent study).

<sup>23</sup> Economics 704 is the most basic to all courses, and thus a prerequisite, explicitly or implicitly, to all courses in our graduate level core and field courses. If a student already has a course equivalent to Economics 704 or above, the student can take the next core micro theory course that fits the student's background and need.

courses in our graduate program. Graduate Minor students should be able to access a dozen first courses in several fields after completing one or two of the 700-level core concept and methodology courses. There can be many variations in the mixture of four courses, depending on individual students' technical background and home program orientation. To illustrate, we list below several tracks for the Graduate Minor Economics<sup>24</sup>. For notational economy, "E" in the course numbers stands for Economics.

The most standard track configuration is the "General Economics Track" consisting of E704 and three courses chosen from {E705, E706, E707, E702, E703}. For example, {E704, E705, E706, E707} constitutes a balanced set of micro and macro economic theory courses. One can also construct an econometrics oriented set, such as {E704, E706, E702, E703}, in which basic micro and macro economic theory courses are combined with two econometrics courses. Another possibility is {E704, E705, E702, E703} which combines core microeconomics and econometric methods. The six 700-level courses in micro, macro, and econometric methods provide self-contained and sufficiently flexible choice sets for most non-economics graduate students. Students who already have sufficient backgrounds in mathematics, statistics and undergraduate economics can have variations of the above theme, by selecting all or some of the four courses from Ph.D. core courses, namely, {E804, E805, E808} in micro, {E806, E807, E809} in macro, and {E741, E742} in econometrics. For example, it is entirely feasible that a non-economics graduate student with a strong statistics background satisfies a Graduate Minor in Economics by choosing {E704, E706, E741, E742} in lieu of E702 and E703.

Students who already have the technical background and intellectual maturity may wish to try selective Ph.D. level courses in ways to complement their home doctoral programs. For example, consider the following scenarios.

Applied Micro Track in Public Economics: E704, E705, E790, E830

Applied Micro Track in Labor Economics: E704, E702, E883, E884

International Economics Track: E704, E706, and (E861, E862, or E863)

Econometrics Track: (E702 or E703), E704, (E741 or E742)

Game Theory Track: (E705 or E805), E808, (E871 or E817), and (E816 or E818)

Micro Theory Track: (E704 or E804), (E705 or E805), (E808 or E871), and E819

Macro Theory Track: (E704 or E804), (E706 or E806), (E707 or E807), and (E809 or E821)

Likewise it is possible to accommodate track configurations in industrial organization, experimental economics, or economic history. Since our graduate program offers 8 major fields and approximately 30 lecture courses every year, there are a dozen possible variations depending on the field interest and background of individual Graduate Minor students.

While the set of admissible courses to the Graduate Minor in Economics program is large and flexible, certain courses are excluded. Economics 640, 740, 700 and 701, even though they can complement micro, macro and econometrics course, shall not be used to satisfy the course requirements of the

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<sup>24</sup> These track names are only for the purpose of facilitating the description of various course configurations with varying emphasis on theory, application and econometrics; these track names will not appear in the student's transcript designation. The only transcript designation is "Graduate Minor in Economics" for all track configurations.

Graduate Minor in Economics<sup>25</sup>. Economics 893 (independent study), Economics 999 (Dissertation Research) and the Departmental Seminar/Workshop series are not admissible towards the Graduate Minor in Economics requirement. If a seminar-title course is used to deliver substantively lecture-type instructions with students' participation, the Economics DGS will designate it as an admissible course for the Graduate Minor in Economics<sup>26</sup>. Non-economics Ph.D. students will be allowed to take E893 (independent study), seminars and workshops in our curriculum, subject to the Economics DGS approval, after they have met the Graduate Minor requirements.

In the appendix, illustrative, but not exhaustive, charts show representative choices available to students pursuing the Graduate Minor in Economics, followed by a table summarizing the most recent fielding of all Ph.D. level courses in economics. The bulletin of all economics graduate courses is at the end.

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<sup>25</sup> They are technical courses to supplement the core courses in economics; they do not have sufficient economics content in themselves.

<sup>26</sup> Economics 970 (Seminar in Industrial Organization) and Economics 981 (Seminar in Labor Economics) are currently the only seminar-title courses that qualify as de facto advanced lecture field courses towards the Graduate Minor in Economics.

NEW 700-LEVEL COURSES	CORES & FIELDS	PH.D. LEVEL COURSES	GRADUATE MINOR IN ECONOMICS																						
<p><b>Survey of Microeconomics</b></p> <table border="1" data-bbox="305 569 423 680"> <tr><td>704</td></tr> <tr><td>705</td></tr> </table>	704	705	<table border="1" data-bbox="643 373 1101 443"> <tr><td>Microeconomics Core</td><td>804</td><td>805</td><td>808</td></tr> </table> <table border="1" data-bbox="643 491 1101 560"> <tr><td>Advanced Theory</td><td>817</td><td>818</td><td>819</td></tr> </table> <table border="1" data-bbox="643 588 1101 657"> <tr><td>Industrial Organization</td><td>871</td><td>872</td><td>970</td></tr> </table> <table border="1" data-bbox="643 684 1101 753"> <tr><td>Urban &amp; Public Finance</td><td>790</td><td>830</td><td>832</td></tr> </table> <table border="1" data-bbox="643 781 1101 850"> <tr><td>Labor Economics</td><td>883</td><td>884</td><td>981</td></tr> </table>	Microeconomics Core	804	805	808	Advanced Theory	817	818	819	Industrial Organization	871	872	970	Urban & Public Finance	790	830	832	Labor Economics	883	884	981		<p><b>Graduate Minor Track in Microeconomics Fields</b></p> <p>Choose 4 courses, consisting of E704 and 3 from the micro field cluster.</p>
704																									
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Microeconomics Core	804	805	808																						
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<p><b>Survey of Econometric Methods</b></p> <table border="1" data-bbox="305 1094 423 1205"> <tr><td>702</td></tr> <tr><td>703</td></tr> </table>	702	703	<table border="1" data-bbox="643 968 1101 1037"> <tr><td>Econometrics Core</td><td>740</td><td>741</td><td>742</td></tr> </table> <table border="1" data-bbox="643 1106 1101 1176"> <tr><td>Advanced Econometrics</td><td>840</td><td>841</td><td>842</td></tr> </table>	Econometrics Core	740	741	742	Advanced Econometrics	840	841	842		<p><b>Graduate Minor Track in Econometrics</b></p> <p>Choose 4 courses consisting of E704 and 3 from the econometrics cluster</p>												
702																									
703																									
Econometrics Core	740	741	742																						
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<p><b>Survey of Macroeconomics</b></p> <table border="1" data-bbox="321 1430 440 1541"> <tr><td>706</td></tr> <tr><td>707</td></tr> </table>	706	707	<table border="1" data-bbox="643 1325 1101 1394"> <tr><td>Monetary &amp; Macro</td><td>810</td><td>820</td><td>821</td></tr> </table> <table border="1" data-bbox="643 1442 1101 1512"> <tr><td>International Economics</td><td>861</td><td>862</td><td>863</td></tr> </table> <table border="1" data-bbox="643 1539 1101 1608"> <tr><td>Macroeconomics Core</td><td>806</td><td>807</td><td>809</td></tr> </table>	Monetary & Macro	810	820	821	International Economics	861	862	863	Macroeconomics Core	806	807	809		<p><b>Graduate Minor Track in Macroeconomics Fields</b></p> <p>Choose 4 courses consisting of E704 and 3 from the macroeconomics cluster</p>								
706																									
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<p>Take E704 plus three courses from E705, E706, E707, E702, and E703, or their 800-level course mixture as approved by Director of Graduate Studies in Economics</p>			<p><b>Graduate Minor Track in General Economics</b></p>																						

**Graduate Courses in Economics**

CORE + FIELDS	COURSE	INSTRUCTORS	CONTENT
Micro Core (First Year)	804	Miyazaki	Micro Theory I
	805	Peck	Micro Theory II
	808	Healy	Micro Theory III
Macro Core (First Year)	806	Dupor	Macro Theory I
	807	Lam	Macro Theory II
	809	Evans	Macro Theory III
Math for Economics (First Year)	Math Camp	Miyazaki	Optimization Methods in Economics
	700	Schmeidler	Mathematical Analysis for Economists
	701	McCafferty	Dynamic Analysis in Economics
Econometrics & Statistics Core (First Year)	640	McCulloch	Probability
	740	Lam	Statistical Inference
	741	Lee	Core Econometrics I
Econometrics	742	Cosslett	Core Econometrics II
	840	de Jong	Time Series Econometrics
	841	Cosslett	Advanced Econometrics I
	842	de Jong	Advanced Econometrics II
	843	Lee	Research in Micro Econometrics
	844	de Jong	Research in Time Series Econometrics
Macro & Monetary Economics	940	de Jong/Cosslett	Econometrics Seminar
	810	Evans	Advanced Macro I
	811	Dupor	Advanced Macro II
	820	Ogaki	Macro Econometrics
	821	McCulloch	Monetary Economics
International Economics	920	Dupor/Kaboski	Macroeconomics Seminar
	861	Li	International Trade
	862	Ogaki	International Macro
Labor Economics	863	Kaboski	Growth and Development
	883	Light	Economics of Labor
	884	Weinberg	Topics in Advanced Labor Economics
Industrial Organization	981	Blau	Seminar in Labor Economics
	871	Marvel	Theory of Industrial Organization
	970	Kagel/Levin	Experimental Methods in I.O.
	872	Lewis	Empirical Methods in I.O.
Public Finance & Urban Economics	970	Marvel/Reagan	Applied Micro Seminar
	830	Mumy	Public Finance
	832	Morelli	Political Economy
Advanced Theory & Game Theory	790	Haurin	Urban Economics
	816	Ye	Mechanism Design
	817	Peck	Game Theory
	818	Yang	Economics of Information
	819	Schmeidler	Economics of Uncertainty
Economic History & History of Economic Thought	915	Yang/Healy	Advanced Theory Seminar
	613+893	Steckel	American Economic History
	614+893	Baack	European Economic History
	615+893	Logan	Economic Transition
	802	Mumy	History of Economic Thought

**ECONOMICS****Course Offerings Bulletin** <<http://www.ureg.ohio-state.edu/course/autumn/>>

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**Mathematics and Statistics for Economists**

**640 Probability Theory U G 5** Probability, random variables, Markov chains, discrete and continuous distributions, transformations, moment generating function techniques, limit theorems, expectation, variance. Au Qtr. 2 2-hr cl. Prereq: Math 153 or equiv. Not open to students with credit for Stat 520 or 620.

**700 Advanced Mathematical Techniques in Economics G 5** Advanced mathematical analysis of economics problems; topics to include basic set theory and real analysis; optimization subject to inequality constraints and dynamic optimization. Au Qtr. 2 1.66-hr cl. Prereq: 600 or equiv. Not open to students with credit for this topic under 894.

**701 Dynamic Analysis in Economics G 5** Optimization methods and economic applications, calculus of variations, optimal control, and elements of dynamic programming. Wi Qtr. 2 2-hr cl. Prereq: 700 or permission of instructor. Primarily for the first year economics Ph.D. students to complement micro, macro and econometrics core courses.

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***New Graduate Minor Core (in process pending final approval)***

**702 Survey of Econometric Methods I G5** Survey of fundamental methods and applications of econometrics from economists' viewpoint, covering essential aspects of linear regression and on a range of econometric topics in various microeconomics fields. Topics and emphasis may vary depending on the instructor. Prereq. Stat 154 (introductory statistics) and Math 571 (introductory linear algebra) or their economics course equivalent per instructor consent. Not open to students with credit in 741 or 742.

**703 Survey of Econometric Methods II G5** Survey of methods and topics in the econometrics of time series and panel data, with an emphasis on empirical examples in economics. Topics include stationary and nonstationary time series models, conditional heteroskedasticity and volatility, vector autoregression (VAR), cointegration, fixed and random effects models, and missing data. Prereq. 702 or equivalent per permission of instructor. Not open to students with credit in 741 or 742.

**704 Survey of Microeconomic Theory I G5** Survey of neoclassical economics, its methodology, scope and paradigm extensions: production, consumption, and competitive market equilibrium. Au Qtr. Prereq. 501, an intermediate microeconomics equivalent, or the instructor's consent. Not open to students with credit in the first course of a Ph.D. microeconomics curriculum such as 804.

**705 Survey of Microeconomic Theory II G5** Second course in the graduate level survey of microeconomic theory, with emphasis on economics of information and incentives. Topics

include game theory, principal-agency models, moral hazard and adverse selection. Prereq. 704 or equivalent per instructor consent. Not open to students with credit in 805 or 808.

**706 Survey of Macroeconomic Theory I G5** Study of macroeconomic models of short-run fluctuations and business cycles with emphasis on monetarist models, real business cycle models and Keynesian models. Prereq. 502 (intermediate macroeconomics) or equivalent) or the instructor's consent. Not open to students with credit in the first course of a Ph.D. macroeconomics curriculum such as 806.

**707 Survey of Macroeconomic Theory II G5** Continuation of 706 (Macroeconomics I) and survey of new models of money, banking, unemployment, inflation, and economic growth. Prereq.: Economics 706 or equivalent per instructor consent. Not open to students with credit in Economics 807 or 809.

### **Core Microeconomics**

**804 Microeconomic Theory I G 5** Theories of consumers and producers. Au Qtr. Prereq: 501A or equiv.

**805 Microeconomic Theory II G 5** Classical partial equilibrium (competition, monopoly, monopolistic competition, Cournot and Bertrand oligopoly models, location models) and general equilibrium theory. Wi Qtr. Prereq: 600 and 804.

**808 Microeconomic Theory III G 5** Partial equilibrium welfare theory; economic dynamics; economics of information and uncertainty; and elementary game theory; may also include topics in industrial organization, labor, public finance, and others. Sp Qtr. Prereq: 805.

### **Core Macroeconomics**

**806 Macroeconomic Theory I G 5** Theory of income and employment; Keynesian aggregate supply and demand; consumption, saving, and the multiplier; determinants of investment and the accelerator; government's role. Au Qtr. Prereq: 502A or equiv.

**807 Macroeconomic Theory II G 5** Aggregate supply: expectations, introduction to dynamic macroeconomic models. Wi Qtr. Prereq: 600, 804, and 806. Not open to students with credit for 809.01.

**809 Macroeconomic Theory III G 5** Stochastic dynamic problems in macroeconomics; questions of growth, business cycles, and policy. Sp Qtr. Prereq: 807. Not open to students with credit for 809.02.

### **Core Econometrics**

**740 Inference and Decision Analysis G 5** Distribution theory, point and interval estimation, statistical hypothesis testing, decision analysis under uncertainty. Wi Qtr. 4 cl. Prereq: 640 or equiv.

[741 General Linear Regression Analysis G 5](#) Multiple regression analysis; the general linear model; non-linear and distributed lag models. Sp Qtr. 4 cl. Prereq: 600 and 740, or Stat 521.

[742 Econometrics G 5](#) Review of the general linear model; identification; estimating criteria; single and simultaneous equation estimation; econometric application. Au, Sp Qtrs. 4 cl. Prereq: 741.

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### **Field: Macro-Monetary Economics**

[810 Advanced Macroeconomics G 5](#) Examines recent contributions to macroeconomics and trains advanced graduate students to develop skills for research in theoretical, empirical and policy areas in macroeconomics. Au, Wi Qtrs. 2 2-hr cl. Prereq: 809 or permission of instructor.

[811 Applied Macroeconomics G 5](#) Application of econometric methods to theoretical structures developed in 806 and 809; estimation and validation of macroeconomic models. Sp Qtr. 2 2.75-hr cl. Prereq: 742 and 809, or permission of instructor.

[820 Monetary Theory G 5](#) Role of money in theoretical analysis of forces determining and influencing level of income, employment, and prices. Au Qtr. Prereq: 520, 805, and 806; or equivs.

[821 Monetary Economics G 5](#) Develops monetary economics as a research field and covers a range of topics in the theoretical, empirical and policy aspects of money, credit and banking. Wi Qtr. Prereq: 806, 807, 809 or permission of instructor. May be graded S/U with approval of Economics Director of Graduate Studies.

[920 Seminar in Monetary Policy G 5](#) Application of monetary theory to issues of public policy in banking and monetary affairs; examination of public hearings and policy literature. Au, Sp Qtrs. Prereq: 820 and 821. Repeatable to a maximum of 30 cr hrs.

### **Field: Advanced Economic Theory**

[815 Mathematical Economics I G 5](#) Mathematical analysis of microeconomic problems including consumer and production theory and general equilibrium. Prereq: 808.

[816 Mathematical Economics II G 5](#) Mathematical analysis of macroeconomic problems including static and dynamic systems and optimal control. Prereq: 809.

[817 Game Theory G 5](#) The methodology and survey of the development of game theory including concepts of equilibrium, beliefs, expectations and behavioral strategies. Wi Qtr. 2 2-hr cl. Prereq: 804, 805 and 808 or equiv with permission of instructor.

[818 Economics of Information G 5](#) How information affects economic decision making in strategic settings and on markets; topics include theories of speculation, rational expectations, signaling principal-agent models, and search. Au Qtr. 2 1.66-hr cl. Prereq: 804, 805, 808. Not open to students with credit for this topic under 894.

[819 Economic Behavior under Uncertainty G 5](#) Axiomatic approaches to economic behavior under uncertainty, classical expected utility paradigm, subjective probability, and behavioral theory of economic choice under uncertainty. Prereq: 804, 805, and 808, or equiv of the first-year graduate



microeconomics sequence with permission of instructor. S/U option available only upon the Economics DGS approval.

**915 Seminar in Price Theory G 5** Special topics in economic theory. Au, Sp Qtrs. Prereq: 808 and 809. Repeatable to a maximum of 30 cr hrs.

### **Field: Urban and Public Economics**

**730 Public Finance U G 5** Comprehensive survey and analysis of the principal fiscal activities of contemporary governments; logic of public sector activity, taxation principles and practice, intergovernmental relations, current fiscal problems. Wi Qtr. 2 2-hr cl. Prereq: PubPol&M 830, or Econ 501A and grad standing, or permission of instructor. Not open to students with credit for 530 or PubPol&M 730. Cross-listed in Public Policy and Management.

**790 Urban Economics G 5** Application of economic theory to urban problems; topics include slums, residential segregation, intracity location of economic activity, urban renewal, urban sprawl, transportation, and governmental organization. Sp Qtr. 4 cl. Prereq: 705, Geog 650, and grad standing; or permission of instructor.

**830 Advanced Public Finance I G 5** A theoretical and empirical investigation of the economic behavior of the public sector; theory of social goods, problems of tax structure, incidence, multi-unit finance. Au Qtr. Prereq: 805.

**832 Advanced Public Finance II G 5** Continuation of 830; topics include intergovernmental relations, tax incidence, and tax reform. Wi Qtr. Prereq: 830.

### **Field: Econometrics**

**840 Time-Series Econometrics G 5** Fundamental elements of time series methods; recently developed techniques for the analysis of economic time series. Au Qtr. 2 2-hr cl. Prereq: 742.

**841 Advanced Econometrics I G 5** Selected advanced topics in econometrics such as non-parametric and semiparametric estimation, numerical optimization, Markov chain, Monte Carlo methods and duration models used in economics. Prereq: 742 or equiv with permission of instructor.

**842 Advanced Econometrics II G 5** Theory and application of advanced quantitative research methods; computerized application of econometric methods developed in 742. Sp Qtr. Prereq: 742.

**843 Research Topics in Micro Econometrics G 5** Surveys and trains advanced PhD students in recent developments in micro econometrics; both theoretical and applied topics in economics will be covered. Au Qtr. 2 2-hr cl. Prereq: 742, 841 and 842 or equiv with permission of instructor. Repeatable to a maximum of 15 cr hrs.

**844 Research Topics in Time Series Econometrics G 5** Surveys and trains advanced PhD students in economics with recent techniques and concepts in the econometric analysis of times series models. Wi Qtr. 2 2-hr cl. Prereq: 742 or equiv with instructor's permission, 840 recommended. Repeatable to a maximum of 15 cr hrs.

[940 Seminar in Econometrics G 5](#) Examination of economic problems whose solutions may advantageously be sought by use of the methods of mathematics and mathematical statistics. Au, Sp Qtrs. Prereq: 742 and 842 or equiv or permission of instructor. Repeatable to a maximum of 30 cr hrs.

### **Field: International Economics**

[861 Advanced Microeconomic Trade Theory G 5](#) Advanced nonmonetary international trade theory; analysis of the effect of trade and commercial policies on the allocation of resources, income distribution, and growth. Au Qtr. 4 cl. Prereq: 805.

[862 Advanced Macroeconomic Trade Theory G 5](#) Advanced monetary international trade theory; analysis of payments adjustments under alternative international monetary institutions. Wi Qtr. Prereq: 805 and 806; 861 recommended.

[863 Economic Growth and International Trade G 5](#) Evolution of the world economy, from theoretical and empirical perspectives, including Solow growth models, optimal economic growth, models of overlapping generations, and endogenous economic growth. Sp Qtr. 2 2-hr cl. Prereq: 808.

### **Field: Industrial Organization**

[871 Industrial Organization I G 5](#) An investigation of information economics and market-based transactions in the theory of the firm. Wi Qtr. 2 2-hr cl. Prereq: 808.

[872 Industrial Organization II G 5](#) Economic analysis of industry structure, conduct, performance, and related issues of public policy. Sp Qtr. Prereq: 808 and 871.

[970 Seminar in Structure and Regulation of Industry G 5](#) Economic bases for government participation in business activities: antitrust, regulation, and collective decision making. Au, Sp Qtrs. Prereq: 872. Repeatable to a maximum of 30 cr hrs.

### **Field: Labor Economics**

[883 Advanced Labor Economics I G 5](#) The firm as production function, employment contracting in a competitive market, and collective action (labor unions and employment contracting). Au Qtr. Prereq: 805 and 806.

[884 Advanced Economics of the Labor Market G 5](#) Economic theory and empirical evidence relating to labor allocation and wage determination. Wi Qtr. Prereq: 805 and 806.

[981 Seminar in the Economics of the Labor Market G 5](#) Selected topics and issues in wage determination, employment, and unemployment. Sp Qtr. Prereq: 884. Repeatable to a maximum of 10 cr hrs.

### **Field: Economic History**

[613 Economic History of the United States U G 5](#) General survey from discovery of America to present; European economic background; westward movement and its effects; development of economic institutions in the United States. Au, Sp Qtrs. 2 2-hr cl. Prereq: 444 or 641, or Stat 245, 501 and 502; or grad standing.

**614 Economic History of Western Europe U G 5** Survey from 1750 through the post-World War II period; from Britain in the West to Russia in the East. Wi Qtr. 2 2-hr cl. Prereq: 444 or 641, or Stat 245, 501 and 502; or grad standing.

**615 Economic Transitions in the 20th Century U G 5** Surveys major themes in transitioning economies in the 20th century; focus on planned economies and developing economies as they integrate into world economy. Sp Qtr. 2 2-hr cl. Prereq: 444 or 641 or Stat 245, and Econ 501 or 502 or permission of instructor.

**802 History of Economic Thought G 5** Surveys major themes in the development of economic theory, thought, methodology, and paradigm in historical perspective. Wi Qtr. Prereq: 804 or 806 or permission of instructor.

**893 Individual Studies G 1-15** Advanced readings in economics and related fields. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

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**893 Individual Studies G 1-15** Advanced readings in economics and related fields. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

**894 Group Studies G 3-5** Advanced courses in economics and related fields. Su, Au, Wi, Sp Qtrs. Repeatable.

**999 Research in Economics: Dissertation G 1-18** Research for dissertation purposes only. Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## **Economics 702: Survey of Econometric Methods I**

Credit hours: 05  
Course listing: G  
Grade: Letter Grade

**Prerequisites:** Introductory statistics, including basic uses of  $t$  and  $F$  statistics (Stat 254 or equivalent); introductory linear algebra (Math 571 or equivalent), or their economics course equivalent per instructor consent. Not open to students with credit for Economics 741 or 742.

**Course Abstract:** This course surveys fundamental methods and applications of econometrics from economists' viewpoint. Emphasis is on the essential aspects of linear regression and on a range of econometric topics with a focus on applications in various microeconomics fields. Topics and emphasis may vary depending on the instructor.

Lectures: twice a week, each 1 hr 48 mins.  
Lab & Discussion: once a week, 1 hr 48 mins  
Time and Place: TBA

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**Instructor (TBA):** Professor Steve Cosslett (Tentative)  
Department of Economics  
Office: 410 Arps Hall, 1945 N High Street  
Phone: 292-6701, Email: Economist.1@osu.edu  
Office hours: TBA

**Course Objectives:** This course is intended for, but not limited to, students taking Graduate Minor in Economics. Students will gain working experience with classical and modern econometric techniques applied to a series of microeconomic examples. The course starts with the classical linear regression model and the interpretation of the results of least-squares estimation, before showing how to handle the problems of heteroskedasticity, autocorrelation, and endogenous regressors. The second principal estimation method in econometrics, maximum likelihood estimation, is then introduced. This leads to models of discrete choice, models of count data, and the sample selection problem, all of which have become major tool of analyzing empirical data sets in applied microeconomics fields such as labor economics, public finance, urban economics, consumer economics, experimental economics and industrial organization.

**Course Requirements and Evaluation:** The course grade will be based on a midterm exam (30%), a final exam (40%), and eight homework assignments (30%). Homework assignments will ask students to explain or generalize concepts that were covered in class, to solve numerical and algebraic problems, and to carry out exercises using computer software. Assignments will be handed out in class and will be due in class one week later.

**ACADEMIC MISCONDUCT:** It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct ([http://studentaffairs.osu.edu/info\\_for\\_students/csc.asp](http://studentaffairs.osu.edu/info_for_students/csc.asp)).

**Class web site:** [www.econ.ohio-state.edu/scosslett/econ703](http://www.econ.ohio-state.edu/scosslett/econ703)

The recommended computer software package for this class is *EViews*, which is available for use in the Economics Department computer labs and also in some other computer labs on campus (locations to be announced). There will be a lab session of the class to familiarize students with the basic features of *EViews*. Students who wish to use other econometric software packages should consult the instructor. Information will be provided on purchasing individual copies of the student edition of *EViews* for those students who wish to do so, but this is not required. Students will need portable storage media such as a USB drive or floppy disk, because it is inadvisable to store files on the lab computers. Data required for homework assignments and answers to homework assignments will be posted on the class web site.

**Required Textbook:** Marno Verbeek, *Modern Econometrics*, 2nd ed., Wiley, 2004. (ISBN 0470857730)

**Recommended Textbooks:**

Peter Kennedy, *A Guide to Econometrics*, 5th ed, MIT Press, 2003 (ISBN 026261183X): a readable paperback emphasizing concepts and interpretation rather than technical detail.

William H. Greene, *Econometric Analysis*, 5th Edition, Prentice Hall, 2003 (ISBN 0130661899): a standard reference that covers material in this course in greater depth and at a more advanced level.

**COURSE OUTLINE:**

All readings are from Verbeek unless otherwise indicated.

- |         |                                                                                                                                            |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Class 1 | Least squares and basic properties of linear regression<br>Review of basic statistical concepts<br>Reading: Chapter 1 and Sections 2.1-2.3 |
| Class 2 | <i>Lab session</i> (Economics Department computer lab, Arps 318)<br>Introduction to use of the <i>EViews</i> computer package              |

- Assignment 1 handed out
- Class 3 Goodness of fit and hypothesis testing in the linear model; consistency and asymptotic normality; simulation  
Reading: Sections 2.4-2.6
- Class 4 Multicollinearity; prediction in the linear model  
*Example 1:* The capital asset pricing model (CAPM)  
Reading: Sections 2.7-2.9  
Assignment 1 due; Assignment 2 handed out
- Class 5 Interpretation of regression coefficients; selecting the explanatory variables; misspecification tests; structural breaks  
Reading: Sections 3.1-3.3
- Class 6 *Example 2:* Explaining house prices  
*Example 3:* Explaining individual wages  
Reading: Sections 3.4-3.5  
Assignment 2 due; Assignment 3 handed out
- Class 7 Heteroskedasticity  
Reading: Sections 4.1-4.4
- Class 8 *Example 4:* Explaining labor demand  
First-order autocorrelation; Durbin-Watson test  
*Example 5:* The demand for ice cream  
Reading: Sections 4.5-4.8  
Assignment 3 due; Assignment 4 handed out
- Class 9 More general models of autocorrelation; Newey-West standard errors  
*Example 6:* Risk premia in foreign exchange markets  
Reading: Sections 4.9-4.11
- Class 10 Midterm exam  
Assignment 4 due
- Class 11 Endogenous regressors  
Reading: Sections 5.1-5.2  
Assignment 5 handed out
- Class 12 Instrumental variables estimation  
*Example 7:* Estimating the returns to schooling  
Reading: Sections 5.3-5.4
- Class 13 Two-stage least squares estimation; weak instruments  
Reading: Section 5.5  
Assignment 5 due; Assignment 6 handed out
- Class 14 Maximum likelihood estimation  
Reading: Section 6.1
- Class 15 Wald test, likelihood ratio test, and Lagrange multiplier test; applications of

- the Lagrange multiplier test in the normal linear model  
Reading: Sections 6.2-6.3  
Assignment 7 handed out; Assignment 6 due
- Class 16 Binary choice models: probit and logit  
*Example 8:* The impact of unemployment benefits on reciprocity  
Reading: Section 7.1
- Class 17 Multi-response models: ordered response models and multinomial models;  
models for count data  
*Example 9:* Willingness to pay (WTP) for natural areas  
*Example 10:* Patents and R&D expenditures  
Reading: Sections 7.1-7.3  
Assignment 7 due; Assignment 8 handed out
- Class 18 Tobit models  
*Example 11:* Expenditures on alcohol and tobacco  
Reading: Sections 7.4-7.5
- Class 19 Sample selection bias; estimating treatment effects  
Reading: Sections 7.6-7.7  
Assignment 8 due
- Exam Week: Final exam

**Students with disabilities that have been certified by the Office for Disabilities Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. For more information, please contact the Office of Disability Services at 292-3307.**

## **Economics 703: Survey of Econometric Methods II**

Credit Hours: 05  
Course Listing: G  
Grade: Letter Grade

**Prerequisites:** Economics 702 or equivalent, or permission of instructor. Not open to students with credit for Economics 741 or 742.

**Course Abstract:** This course explores topics in the econometrics of time series and panel data, with an emphasis on empirical examples in economics. Time series topics include stationary and nonstationary time series models, conditional heteroskedasticity and volatility, vector autoregression (VAR), and cointegration. Panel data topics include the fixed and random effects models, followed by the use of panel data in dynamic models, nonstationary time series, binary choice, and missing data. Topics and emphasis may vary depending on the instructor.

Lectures: twice a week, each 1 hr 48 mins.  
Time and Place: TBA

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**Instructor (TBA) :** Professor Steve Cosslett (Tentative)

Department of Economics  
Office: 410 Arps Hall, 1945 N High Street  
Phone: 292-6701, Email: Economist.1@osu.edu  
Office hours: TBA

**Course Objectives:** This course can be taken by, but not limited to, students planning to pursue Graduate Minor in Economics. Students should be familiar with the material covered in Economics 702, namely, basic statistical methods, linear algebra, the linear regression model and generalized least squares estimation.

Students will gain working experience with classical and modern econometric techniques, with applications to economic time series and panel data. The course starts with a brief review of linear regression, followed by an introduction to the generalized method of moments (GMM) estimator. Time series topics include stationary and nonstationary time series models, conditional heteroskedasticity and volatility, vector autoregression (VAR), and cointegration. The second part of the course covers panel data and duration models. Panel data topics include the fixed and random effects models, followed by the use of panel data in more complicated situations such as dynamic models, nonstationary time series, binary choice, and missing data.

**Course requirements:** The course grade will be based on a midterm exam (30%), a final exam (40%), and eight homework assignments (30%). Homework assignments will ask



students to explain or generalize concepts that were covered in class, to solve numerical and algebraic problems, and to carry out exercises using computer software. Assignments will be handed out in class and will be due in class one week later.

**ACADEMIC MISCONDUCT:** It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct ([http://studentaffairs.osu.edu/info\\_for\\_students/csc.asp](http://studentaffairs.osu.edu/info_for_students/csc.asp)).

**Class web site:** [www.econ.ohio-state.edu/scosslett/econ703](http://www.econ.ohio-state.edu/scosslett/econ703)

The recommended computer software package for this class is *EViews*, which is available for use in the Economics Department computer labs and also in some other computer labs on campus (locations to be announced). Students who wish to use other econometric software packages should consult the instructor. Information will be provided on purchasing individual copies of the student edition of *EViews* for those students who wish to do so, but this is not required. Students will need portable storage media such as a USB drive or floppy disk, because it is inadvisable to store files on the lab computers. Data required for homework assignments and answers to homework assignments will be posted on the class web page. Class handouts on using *EViews* will be provided.

**Required textbook:** Marno Verbeek, *Modern Econometrics*, 2nd ed., Wiley, 2004. (ISBN 0470857730)

**Supplementary textbooks:**

Peter Kennedy, *A Guide to Econometrics*, 5th ed, MIT Press, 2003 (ISBN 026261183X): a readable paperback emphasizing concepts and interpretation rather than technical detail.

William H. Greene, *Econometric Analysis*, 5th Edition, Prentice Hall, 2003 (ISBN 0130661899): a standard reference that covers material in this course in greater depth and at a somewhat more advanced level.

**COURSE OUTLINE:**

All readings are from Verbeek unless otherwise indicated.

Class 1            Review of the linear regression model and least squares estimation  
                         Reading: Chapter 2

- Class 2      Generalized method of moments (GMM) estimation  
*Example 1:* Estimating intertemporal asset pricing models  
Reading: Sections 5.6-5.7  
Assignment 1 handed out
- Class 3      Introduction to time series; autocorrelation function; ARMA models  
Reading: Sections 8.1-8.2
- Class 4      Nonstationary time series; testing for unit roots  
Reading: Sections 8.3-8.4.2  
Assignment 1 due; Assignment 2 handed out
- Class 5      *Example 2:* Price/earnings ratio (part 1)  
*Example 3:* Long-run purchasing power parity (part 1)  
Estimation of ARMA models; model selection  
Reading: Sections 8.4.3-8.6
- Class 6      Model selection; prediction with ARMA models  
*Example 4:* Price/earnings ratio (part 2)  
Reading: Sections 8.7-8.8  
Assignment 2 due; Assignment 3 handed out
- Class 7      *Example 5:* The expectations theory of the term structure  
Autoregressive conditional heteroskedasticity (ARCH)  
Reading: Sections 8.9-8.10
- Class 8      *Example 6:* Volatility in daily exchange rates  
Multivariate time series; dynamic models; nonstationary variables and  
spurious regression  
Reading: Sections 8.11, and 9.1-9.2.1  
Assignment 3 due; Assignment 4 handed out
- Class 9:      Cointegration; vector autoregressive (VAR) models  
*Example 7:* Long-run purchasing power parity (part 2)  
Reading: Sections 9.2.2-9.4
- Class 10      Midterm exam  
Assignment 4 due
- Class 11      Cointegration in VAR models  
*Example 8:* Long-run purchasing power parity (part 3)  
Reading: Section 9.5  
Assignment 5 handed out
- Class 12      *Example 9:* Money demand and inflation  
Introduction to panel data  
Reading: Sections 9.6 and 10.1
- Class 13      Static models for panel data: fixed effects and random effects  
Reading: Sections 10.2.1-10.2.3  
Assignment 5 due; Assignment 6 handed out

- Class 14      More about static models for panel data: goodness of fit, instrumental variables, heteroskedasticity and autocorrelation  
Reading: Sections 10.2.4-10.2.7 and 5.3
- Class 15      *Example 10*: Explaining individual wages  
Dynamic models for panel data  
Reading: Sections 10.3-10.4  
Assignment 7 handed out; Assignment 6 due
- Class 16      *Example 11*: Wage elasticities of labor demand  
Panel data models with nonstationary variables  
Reading: Sections 10.5-10.6
- Class 17      Panel data models with discrete variables  
Reading: Section 10.7  
Assignment 7 due; Assignment 8 handed out
- Class 18      Missing data and selection bias  
Reading: Section 10.8
- Class 19      Duration models  
*Example 12*: Duration of bank relationships  
Reading: Section 7.8  
Assignment 8 due
- Exam week:    Final exam

**Students with disabilities that have been certified by the Office for Disabilities Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. For more information, please contact the Office of Disability Services at 292-3307.**

## ECONOMICS 704: SURVEY OF MICROECONOMICS I

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Credit Hours	05
Course Listing	G
Grade	Letter Grade

**Prerequisites:** Economics 501, an intermediate microeconomics equivalent, or the instructor's consent. Not open to students with credit in the first course of a Ph.D. microeconomics curriculum such as Economics 804.

**Course Abstract:** a survey of neoclassical economics, its methodology, scope and paradigm extensions: production, consumption, and competitive market equilibrium.

Lectures: twice a week, each 108 minutes  
Discussion Section: once a week, 108 minutes

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**Instructor (TBA) :** Professor Hajime Miyazaki (Tentative)

Department of Economics  
Office: 410 Arps Hall, 1945 N High Street  
Phone: 292-6701, Email: Economist.1@osu.edu  
Office hours: TBA

**Course Objective:** This course is intended for, but not limited to, students taking Graduate Minor in Economics. This course covers techniques, concepts and methodology that constitute the fundamentals of neoclassical economics as well as the standard tool set routinely used in the every day life of an economist. We will focus on theory of competitive firms and households and will cover general economic equilibrium of a competitive markets.

Economics 700 (Mathematics for Economics) is a companion course for this course. E700 covers elementary exposition of optimizations techniques and the use of convexity in economics analysis. Economics 700 and Economics 704 can be taken concurrently. The textbook used in Economics 704 is Carl P. Simon and Lawrence Blume, *Mathematics for Economists*, New York & London: Norton, 1994, ISBN 0-393-95733-0.

**Course Grade:** Your course grade will be based 25% on weekly homework and 75% on three examination scores: two midterm exams (25% each) and the final exam (25%). You are required to take all the three exams. Tentative exam schedules are as follows:

- First Mid Term Exam: October 15 (Monday) 1:30-3:18 PM @RA 115
- Second Midterm Exam: November 12 (Monday) 1:30-3:18 PM @ RA 115
- Final Exam Date: December 3 (Monday), 1:30-3:18 PM @ RA 115

<p><b>ACADEMIC MISCONDUCT: It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported</b></p>
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**cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct ([http://studentaffairs.osu.edu/info\\_for\\_students/csc.asp](http://studentaffairs.osu.edu/info_for_students/csc.asp)).**

**Course web site address:** <<http://www.econ.ohio-state.edu/miyazaki/econ704>>

**Required Textbook:** Hal R. Varian, *Microeconomic Analysis*, Third Edition, New York & London: Norton, 1992, ISBN: 0-393-95735-7.

### **Recommended Textbooks**

Frank Cowell, *Microeconomics: Principles and Analysis*, Oxford University Press, 2005, ISBN 0-19-926777-4.

Hal R. Varian, *Intermediate Microeconomics: A Modern Approach*, Sixth Edition, New York & London: Norton, 2003, ISBN: 0-393-97830-3

### **Advanced Reference Textbooks**

MWG: Andreu Mas-Colell, Michael D. Whinston, and Jerry Green, *Microeconomic Theory*, New York: Oxford University Press, 1995, ISBN: 0-19-507340-1

Geoffrey A. Jehle and Philip J. Reny, *Advanced Microeconomic Theory*, Second Edition, New York & London, Addison Wesley Longman, 2001, ISBN: 0-321-07916-7

### **Reference Monographs**

Gerard Debreu, *Theory of Value: An Axiomatic Analysis of Economic Equilibrium*, Cowles Foundation Monograph No. 17, Cowles Foundation for Research in Economics, Yale University, 1959.

Tjalling C. Koopmans, *Three Essays on the State of Economic Science*, New York: McGraw-Hill, 1957.

## **COURSE OUTLINE**

### **WEEKS 1-3: PRODUCTION THEORY**

A theory of a competitive producer as a price-taking profit maximizer: the fundamental theorem of profit maximization, profit functions, production set, and decentralization in production. Economic duality in the theory of competitive production as a relation between input-output space and economic space (dollars and cents).

Varian: Chap. 1-6, Cowell: Chap. 2, Intermediate Varian: Chap. 17-21  
(MWG: Chap. 5, Jehle & Reny: Chap. 3)

Debreu, Chap. 3

Koopmans, Essay 1.

#### WEEKS 3-5: CONSUMPTION THEORY

Duality methods for a competitive consumer that takes commodity prices as given. Slutsky compensation and revealed preference approach to a consumer's choice: the law of compensating demand and Slutsky equations. Preference, utility and demand as well as their duality counterparts, indirect utility and expenditure functions. Slutsky equations for a consumer with an initial endowment vector: income-labor choice, intertemporal choice, and choice under uncertainty.

Varian: Chap. 7-10, Cowell: Chap. 4-5, Intermediate Varian: Chap. 2-11 and 14.  
(MWG: Chap. 1-4, Jehle & Reny: Chap. 1-2)

Debreu, Chap. 4

#### WEEK 6-7 GENERAL ECONOMIC EQUILIBRIUM:

Robinson Crusoe economy, Edgeworth exchange economy, and Arrow-Debreu model of a general private ownership economy. Walrasian Equilibrium, Pareto Optimality, First and Second Welfare Theorems, and Core.

Varian: Chap. 18, Sec. 18.8-9, Cowell: Chap. 6-7, Intermediate Varian: Chap. 29  
(MWG: Chap. 15, Sec. A-C, Jehle & Reny: Chap. 5)

Debreu, Chap. 5 and 6.  
Koopmans, Essay 1.

#### WEEK 8: OUTPUT MARKETS

Competition: Varian: Chap. 13, Cowell: Chap. 3, Intermediate Varian: Chap. 1, 16, 22,  
(MWG: Chap. 10, , Jehle & Reny: Chap. 4)

William Baumol, "Contestable Markets: An Uprising in the Theory of Industry Structure,"  
*American Economic Review*, Vol. 72, No. 1, March 1982, 1-15.

\*Monopoly: Varian: Chap. 14; Cowell: Chap. 3, Intermediate Varian: Chap. 23-25, (MWG:  
Chap. 12, Jehle & Reny: Chap. 4) \*To be covered only if time permits, and to be treated  
more fully in Economics 705

\*Oligopoly: Varian: Chap. 16, Intermediate Varian: Chap. 26-27, (MWG: Chap. 12, Jehle &  
Reny: Chap. 4) \*To be covered only if time permits, and to be treated more fully in  
Economics 705

#### WEEK 9: RISK AND UNCERTAINTY:

Arrow-Debreu economy, von Neumann-Morgenstern utility function, absolute risk aversion,  
relative risk aversion, competitive insurance market, monopoly insurance market,

Varian: Chap. 11, Cowell: Chap. 8, Intermediate Varian: Chap. 12-13.

(MWG: Chap. 6, Jehle & Reny: Chap. 2)

Debreu, Chap. 2 and 7.

John W. Pratt, "Risk Aversion in the Small and in the Large," *Econometrica*, Vol. 32, 1964, 122-136

M. E. Yarri, "Some Remarks on Measures of Risk Aversion and Their Uses," *Journal of Economic Theory*, Vol. 1, 1969, 315-329.

WEEK 10: EMPLOYMENT CONTRACTS:

Analysis of an enforceable employment contract as a risk sharing arrangement between a risk-neutral employer and risk averse workers. Extensions to efficient bargaining and derivation of Slutsky-like equations as the outcome of management-labor bargaining.

Costas Azariadis, "Implicit Contracts and Underemployment Equilibria", *Journal of Political Economy*, Vol. 83, No. 6, 1975, 1183-1202.

Ian M. McDonald and Robert M. Solow, "Wage Bargaining and Employment", *American Economic Review*, Vol. 71, December 1981, 896-908.

Hajime Miyazaki, "Labor-Management Bargaining: Slutsky Equations and Contract Curves," *Journal of Political Economy*, Vol. 94, No. 6, December 1986, 1225-45.

**Any student who needs an accommodation based on the impact of a disability should contact the instructor as soon as possible to discuss ways to meet his or her special needs. Such students should also contact the OSU Office for Disability Services (292-3307).**

## **ECONOMICS 705: Survey of Microeconomics II**

Credit Hours            05  
Course Listing         G  
Grade                    Letter Grade

**Prerequisites:** Economics 704 or equivalent per instructor consent. Not open to students with credit in Economics 805 or 808.

**Course Abstract:** The second course in the graduate level survey of microeconomic theory, with emphasis on economics of information and incentives. Topics include game theory, principal-agency models, moral hazard and adverse selection.

Lectures twice a week and a discussion section once a week, each 108 minutes long:

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**Instructor (TBA) :** Professor Gene Mumy (Tentative)

Department of Economics  
Office: 410 Arps Hall, 1945 N High Street  
Phone: 292-6701, Email: Economist.1@osu.edu  
Office hours: TBA

**Course Objectives:** This course is intended for, but not limited to, students taking Graduate Minor in Economics. Students will gain working knowledge of techniques and important conceptual developments in microeconomic theory that have occurred in the last two decades, namely, economics of information and game-theoretic equilibrium analysis. Together with Economics 704, this course serves as prerequisites to several many advanced field courses in economics. Proficiency in the material of this course will also prepare students to take Economics 805 and 808 the microeconomics core courses for the Ph.D. students in economics. Students should be able to make use of working papers and research journals in economics after successfully completing this course.

**Course Requirements:** Homework Assignments (30%), Midterm Exam (30%) and Final Exam (40%)

**ACADEMIC MISCONDUCT:** It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct ([http://studentaffairs.osu.edu/info\\_for\\_students/csc.asp](http://studentaffairs.osu.edu/info_for_students/csc.asp)).



Course web site address: <<http://www.econ.ohio-state.edu/miyazaki/econ704>>

### **Required Textbooks**

Hal R. Varian, *Microeconomic Analysis*, Third Edition, New York & London: Norton, 1992, ISBN: 0-393-95735-7.

Gibbons, Robert, *Game Theory for Applied Economists*, Princeton, Princeton University Press, 1992, ISBN: 0-691-04308-6

### **Recommended Textbook**

Frank Cowell, *Microeconomics: Principles and Analysis*, Oxford University Press, 2005, ISBN 0-19-926777-4.

### **Advanced Textbooks for Selective Reading**

Andreu Mas-Colell, Michael D. Whinston, and Jerry Green, *Microeconomic Theory*, New York: Oxford University Press, 1995, ISBN: 0-19-507340-1

Geoffrey A. Jehle and Philip J. Reny, *Advanced Microeconomic Theory*, Second Edition, New York & London, Addison Wesley Longman, 2001, ISBN: 0-321-07916-7

Osborne, M.J. and Ariel Rubinstein, *A Course in Game Theory*, Cambridge, London: The MIT Press, 1994, ISBN 0-262-15041-7

## **COURSE OUTLINE**

WEEKS 1 & 2: Economics of Information: Adverse Selection

Varian, Chapter 25, pp. 457-71, Cowell: Chapter 11.

Akerlof, G., "The Market for Lemons: Quality Uncertainty and the Market Mechanism," *Quarterly Journal of Economics*, vol. 84, no. 3, 1970 pp. 488-500

Spence, M., "Job Market Signaling," *Quarterly Journal of Economics*, vol. 87, no. 3, 1973, pp. 355-374

Rothschild, M. and J. Stiglitz, "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Information," *Quarterly Journal of Economics*, vol. 90, no. 4, 1976, pp. 629-49.

Wilson, C., "A Model of Insurance Markets with Incomplete Information," *Journal of Economic Theory*, 1977, 16: 167-207

Miyazaki, H., "Rat Race and Internal Labor Markets," *Bell Journal of Economics*, vol. 8, no. 2, 1977, 393-418.

Mumy, G., "Policy Controls and Adverse Selection in Clubs," *manuscript* (time permitting we may be able to consider some aspects of this paper)

Coate, S. and G. Loury, "Will Affirmative Action Eliminate Negative Stereotypes?" *American Economic Review*, vol. 83, no. 5, 1993, pp.1220-1240

#### WEEKS 3 & 4: Economics of Information: Moral Hazard and Incentives

Varian, Chapter 11, pp. 172-81, and Chapter 25, pp. 440-57  
Cowell: Chapter 11 (Information)

Arnott, R. and J. Stiglitz, "The Basic Analytics of Moral Hazard," *Scandinavian Journal of Economics*, vol. 90, no. 3, 1988, 383-413.

Holmstrom, B., "Moral Hazard in Teams," *Bell Journal of Economics*, Vol. 13, no. 2, 1982, pp. 324-40

Milgrom, P. "Employment Contracts, Influence Activities, and Efficient Organization Design," *Journal of Political Economy*, vol. 96, no. 1, 1988, pp. 42-60.

Milgrom, P. and J. Roberts, "An Economic Approach to Influence Activities in Organizations," *American Journal of Sociology*, vol. 94, 1989, pp. 154-79.

Shavell, S., "Risk Sharing and Incentives in the Principal and Agent Relationship," *Bell Journal of Economics*, vol. 10, no. 1, 1979, pp. 55-73.

Grossman, S., and O. Hart, "An Analysis of the Principal-Agent Problem," *Econometrica*, vol. 51, no. 1, 1983, pp. 7-45

#### WEEKS 5 & 6 & 7 Game Theory: Complete Information

Vairan: Chapter 15 (Game Theory) Chapter 16 (Oligopoly)  
Cowell: Chapter 10 (Strategic Behavior)

Gibbons: Chapter 1 (Static Games of Complete Information)

Normal Form Games and Nash Equilibrium  
Mixed Strategies and Nash Equilibrium  
Applications: Duopoly, Final-Offer Arbitration, Economics of Commons

Gibbons: Chapter 2 (Dynamic Games of Complete Information)

Complete Information, Perfect Information, Imperfect Information  
Backward Induction, Subgame Perfection  
Applications: Bank Runs, Collusion, Wage-Employment Bargaining, Efficiency Wages, Time Consistency

Rabin, M., "Incorporating Fairness in Game Theory and Economics," *American Economic Review*, 83, 1993, pp. 1281-1292

Ochs, J., "Games with Unique, Mixed Strategy Equilibria: An Experimental Study," *Games and Economic Behavior*, 10, 1994, pp. 202-217

Palfrey, T.R. and H. Rosenthal, "A Strategic Calculus of Voting," *Public Choice*, 41, 1983, pp. 62-78

#### WEEKS 7 & 8: Signaling Games

Gibbons: Chapters 3 and 4 (Games of Incomplete Information)  
Cowell: Chapter 11 (Information)

David M. Kreps, "Chapter 17: Adverse Selection and Market Signaling", *A Course in Microeconomic Theory*, Princeton, NJ: Princeton University Press, 1990, ISBN: 0-691-04264-0

Cho, In-Koo and David M. Kreps, "Signaling Games and Stable Equilibria," *Quarterly Journal of Economics*, 102, 1987, pp. 179-221

#### WEEK 9: Public Goods

Varian, Chapter 10, Sections 2 & 3, Chapter 15, pp. 259-266 and Chapter 23 (Public Goods)  
Cowell: Chapter 13 (Government and Individuals)

Holt, C. and S.K. Laury, "Classroom Games: Voluntary Provision of a Public Good," *Journal of Economic Perspectives*, 11, 1997, pp.209-215

Andreoni, J., "An Experimental Test of the Public Goods Crowding-out Hypothesis," *American Economic Review*, 83, 1993, pp. 1317-1327

Andreoni, J., W. Harbaugh, and L. Vesterlund, "The Carrot or the Stick: Rewards, Punishments and Cooperation," *American Economic Review*, vol. 93, no. 3, 2003, pp. 893-902

Groves T., and J. Ledyard, "Optimal Allocation of Public Goods: A Solution to the Free Rider Problem," *Econometrica*, vol. 45, no. 4, 1977, pp. 783-810

Chen, Yan and C.R. Plott, "The Groves-Ledyard Mechanism: An Experimental Study of Institutional Design," *Journal of Public Economics*, 59, 1996, pp. 335-364

#### WEEK 10: Auctions

Gibbons: Chapter 3: Static Games of Incomplete Information  
Cowell: Chapter 12: Design

Thaler, R.H., "Anomalies: The Winner's Curse," *Journal of Economic Perspectives*, 2, 1988, pp. 191-202

Vickrey, W., "Counterspeculation and Competitive Sealed Tenders," *Journal of Finance*, vol. 16, no. 1, 1961, pp. 8-37

Klemperer P., "Auction Theory: A Guide to the Literature," in *The Economic Theory of Auctions* Vol. 1, Edited by P. Klemperer; Edward Elgar Publishing, 2000.

Kagel, J.H., "Auctions: A Survey of Experimental Research," in *The Handbook of Experimental Economics*, J.H. Kagel and A.E. Roth, eds. Princeton: Princeton University Press, 1995, pp. 501-585

Kagel, J.H. and D. Levin, "The Winner's Curse and Public Information in Common Value Auctions," *American Economic Review*, 76, 1986, pp. 894-920

**Any student who needs an accommodation based on the impact of a disability should contact the instructor as soon as possible to discuss ways to meet his or her special needs. Such students should also contact the OSU Office of Disability Services (292-3307)**

## **ECONOMICS 706: Survey of Macroeconomics I**

Credit Hours           05  
Course Listing         G  
Grade                   Letter Grade

**Prerequisites:** An intermediate macroeconomics (Economics 502 or equivalent) or the instructor's consent. Not open to students with credit in the first course of a Ph.D. macroeconomics curriculum such as Economics 806.

**Course Abstract:** Study of short-run macroeconomic fluctuations and business cycles. Aggregate fluctuations in output, consumption and investment will be examined. Various business cycle theories will be evaluated including monetarist models, real business cycle models and Keynesian models.

Lectures twice a week and a discussion section once a week, each meeting 108 minutes

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**Instructor (TBA)** (tentatively) Pok-Sang Lam, Professor

Department of Economics  
410 Arps Hall, 1945 N High Street  
Phone: 292-6701, Email: [Economist.1@osu.edu](mailto:Economist.1@osu.edu)  
Office hours: TBA

**Course Objectives:** This course is intended for, but not limited to, students taking a Graduate Minor in Economics. Students will gain working knowledge of techniques and important conceptual developments in macroeconomic theory that have occurred in the last two decades. Together with Economics 707, this course serves as a prerequisite to several advanced field courses in economics. Proficiency in the material of this course will also prepare students to take Economics 806 and 807, the macroeconomics core courses for Ph.D. students in economics. The major themes of this course are business cycles and short-run fluctuations, and Economics 707 covers long-run trends and economic growth.

**Course Requirements:** There will be a midterm exam and a final exam. There will be four problem sets given as graded homework sets. The course grade will be based on the following formula: Midterm Exam (45%), Final Exam (45%), and Problem Sets (10%)

**ACADEMIC MISCONDUCT: It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct ([http://studentaffairs.osu.edu/info\\_for\\_students/csc.asp](http://studentaffairs.osu.edu/info_for_students/csc.asp)).**

### **Required Textbook**

Stephen D. Williamson, Macroeconomics (Third Edition), Pearson Addison-Wesley Publishing Company, 2007], ISBN: 0-321-41658-9.

Lectures will be organized to follow the required textbook, and additional readings are provided in the course outline below. A reading packet consisting of the additional readings will also be put on reserve in the Business School Library at Mason Hall.

### **COURSE OUTLINE**

We begin with the measurement issues involved in the study of the business cycle. We then consider the two key components of aggregate output: consumption and investment. The fluctuations of consumption and investment are interpreted in light of economic theories with sound micro-foundations. We will examine the theories of aggregate output fluctuations, covering both the market-clearing and non-market-clearing approaches, including the well-known monetary misconception models, the real business cycle models, and the Keynesian models of nominal rigidity.

#### 1. Business Cycle Measurement (Meetings 1 and 2)

- 1.1. Business Cycle: Basic Notion and Terminologies.
- 1.2. Co-movement.
- 1.3. Components of Aggregate Output.

Williamson, Chapter 3.

Business Cycle Dating Committee, National Bureau Of Economic Research, "The NBER's Recession Dating Procedure," October 21, 2003 (<http://www.nber.org/cycles/recessions.html>).

Romer, Christina D., "The Prewar Business Cycle Reconsidered: New Estimates of Gross National Product, 1969-1908," Journal of Political Economy, Volume 97, February 1989, 1-37.

Stock, James H. and Mark W. Watson, "Has the Business Cycle Changed? Evidence and Explanation," Manuscript, Department of Economics, Princeton University, August 2003.

#### 2. Consumption and Saving (Meetings 3, 4, 5, 6 and 7)

- 2.1. Introduction and Background.
- 2.2. Optimal Consumption: Two-period Model.
- 2.3. Permanent Income Hypothesis. Implications.
- 2.4. Consumption and Financial Market.
- 2.5. Ricardian Equivalence.

Williamson, Chapter 8.

Friedman, Milton, A Theory of Consumption, Chapter 2, National Bureau of Economic Research, Princeton University Press, 1957.

Carroll, Christopher D., "A Theory of the Consumption Function, With and Without Liquidity Constraints," "The Journal of Economic Perspectives, Summer 2001, 23-45.

Shapiro, Matthew D. and Joel Slemrod, "Did the 2001 Tax Rebate Stimulate Spending? Evidence From Taxpayer Surveys," National Bureau of Economic Research Working Paper 9308, Oct. 2002 (<http://www.nber.org/papers/w9308>).

Barro, Robert J., "The Ricardian Approach to Budget Deficits," "The Journal of Economic Perspectives, Spring 1989, 37-54.

3. Investment Spending (Meetings 8 and 9)

3.1. Optimal Investment of Firm: Two-period Model.

3.2. Competitive General Equilibrium.

3.3. Investment and Government Purchases.

3.4. Investment and Total Factor Productivity.

Williamson, Chapter 9.

Chirinko, Robert S., "Business Fixed Investment Spending: A Critical Survey of Modeling Strategies, Empirical Results and Policy Implications," Journal of Economic Literature, Volume 31 (December 1993), 1875-1911.

Stacey Telvin and Karl Whelan, "Explaining the Investment Boom of the 1990s," Journal of Money, Credit and Banking, February 2003, 1-22.

MIDTERM EXAM (Meeting 10)

4. Market Clearing Models of the Business Cycle (Meetings 11, 12, 13, 14 and 15)

4.1. A Monetary Inter-temporal Model.

4.2. Friedman-Lucas Money Surprise Model.

4.3. Real Business Cycle Model.

Williamson, Chapters 10 and 11.

Plosser, Charles I., "Understanding Real Business Cycles," "The Journal of Economic Perspectives, Summer 1989, 51-77.

Romer, Christina D. and David H. Romer, "Does Monetary Policy Matter? A New Test in the Spirit of Friedman and Schwartz," NBER Macroeconomics Annual 1989, 121-183.

5. Keynesian Business Cycle Theory: The Sticky Wage Model (Meetings 16, 17, 18, 19 and 20)

5.1. Sticky Wage and Aggregate Supply.

5.2. IS, LM and Aggregate Demand.

5.3. Non-neutrality of Money and Government Stabilization Policies

Williamson, Chapter 12.

Ball, Lawrence and Gregory N. Mankiw, "A Sticky Price Manifesto," Carnegie-Rochester Conference Series on Public Policy, Volume 41, 1994, 127-151.

Romer, David H., "Keynesian Macroeconomics Without the LM Curve," The Journal of Economic Perspectives, Spring 2000, 149-169.

FINAL EXAM (11th Week)

**Any student who needs an accommodation based on the impact of a disability should contact the instructor as soon as possible to discuss ways to meet his or her special needs. Such students should also contact the OSU Office of Disability Services (292-3307)**



## **ECONOMICS 707: Survey of Macroeconomics II**

Credit Hours           05  
Course Listing         G  
Grade                   Letter Grade

**Prerequisites:** Economics 706 or equivalent per instructor consent. Not open to students with credit in Economics 807 or 809.

**Course Abstract:** Finishes the overview of macroeconomics begun in Macroeconomics I (Econ 706) and then introduces new models of money, banking, unemployment and inflation before turning to economic growth, an area that has prompted some of the most important questions addressed by macroeconomics.

Lectures twice a week and a discussion section once a week, each meeting 108 minutes

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**Instructor:** (tentatively) Professor Paul Evans  
Department of Economics  
410 Arps Hall, 1945 N. High Street  
Phone: 292-6701, Email: Economist.1@osu.edu  
Office hours: (TBA)

**Course Objectives:** The first two and one-half weeks of the course finish our overview of macroeconomics by discussing models of money, banking, unemployment and inflation. We then turn to economic growth. We ask why over the past two centuries growth has taken place at all, why its incidence across countries has been so uneven, and why some countries have become so much richer than other countries. We shall examine these questions and evaluate models to explain them.

**Course Requirements:** Your grade is based on your performance on graded problem sets and two examinations. The problem sets count for 20% of your grade, and each of the examinations counts for 40 %.

**ACADEMIC MISCONDUCT: It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct ([http://studentaffairs.osu.edu/info\\_for\\_students/csc.asp](http://studentaffairs.osu.edu/info_for_students/csc.asp)).**

**Required Textbooks:** Charles I. Jones, *Introduction to Economic Growth*, 2<sup>nd</sup> edition. New York: W. W. Norton, 2002.

Lectures will be organized to follow the required textbook, and additional readings are provided in the course outline below. Lectures notes as well as the syllabus, problem sets, answers to the problem

sets, announcements and all other relevant materials will be posted on the call web site at <http://www.econ.ohio-state.edu/xxxxxx/econ707>. In addition, almost all of the assigned readings aside from the required textbook are available from the OSU Libraries' online *JSTOR*.

## **COURSE OUTLINE:**

### I. Money, Inflation and Banking (Meetings 1 and 2)

1. Money and the Double Coincidence of Wants
2. Long-run Inflation and Its Costs
3. Financial Intermediation and Banking

Chapter 15, Stephen D. Williamson, *Macroeconomics* (Third Edition), Pearson Addison-Wesley Publishing Company, 2007, ISBN: 0-321-41658-9.

N. Kiyotaki and R. Wright, "On Money as a Medium of Exchange," *Journal of Political Economy* 97 (1989): 927-954.

M. Friedman, "The Optimal Quantity of Money," in M. Friedman, *The Optimal Quantity of Money and Other Essays*, 1-50. Hawthorne NY: Aldine, 1969.

T. Sargent, "The Ends of Four Big Inflations," in T. Sargent, *Rational Expectations and Inflation*, 2<sup>nd</sup> edition, 43-116. New York: Harper Collins, 1993.

S. R. Aiyagari, "Deflating the Case for Zero Inflation," *Federal Reserve Bank of Minneapolis Quarterly Review* (Summer 1990): 2-11. Available for downloading at <http://minneapolisfed.org/research/qr/>.

D. Diamond and P. Dybvig, "Bank Runs, Liquidity, and Deposit Insurance," *Journal of Political Economy* 91 (1983): 401-419.

### II. Unemployment (Meetings 2 and 3)

1. Unemployment and Participation Rates
2. Search Model of Unemployment
3. Efficiency Wage Models

J. McCall, "Economics of Information and Job Search," *Quarterly Journal of Economics* 84 (1970): 113-126.

S. Shavell and L. Weiss, "The Optimal Payment of Unemployment Insurance Benefits over Time," *Journal of Political Economy* 87 (1979): 1347-1362.

### III. Inflation, the Phillips Curve and Central-Bank Commitment (Meetings 4 and 5)

1. The Phillips Curve
2. Friedman-Lucas Money Surprise Model
3. Inflation and Central-Bank Commitment

M. Friedman, "The Role of Monetary Policy," *American Economic Review* 58 (1968): 1-17.

F. Kydland and E. Prescott, "Rules Rather than Discretion: The Inconsistency of Optimal Plans," *Journal of Political Economy* 87 (1977): 473-492.

R. Barro and D. Gordon, "Rules, Discretion and Reputation in a Model of Monetary Policy," *Journal of Political Economy* 12 (1983): 101-121.

IV. The Facts of Economic Growth (Meeting 6), Chapter 1 of Jones

Data of Growth and Development, and Stylized Facts of Growth

V. The Solow Model (Meetings 6 and 7), Chapter 2 of Jones

1. The Basic Solow Model
2. The Solow Model with Technology
3. The Solow Model with Human Capital
4. comparative Statics and Properties of the Steady State

R. M. Solow, "A Contribution to the Theory of Economic Growth," *Quarterly Journal of Economics* 70 (1956): 65-94.

VI. Empirical Applications of Neoclassical Growth Models (Meetings 8 and 9), Chapter 3 of Jones

1. Evaluating Economic Growth in the Solow Model
2. Growth Accounting
3. Convergence and Differences in Growth Rates
4. Evolution of the World Income Distribution

N. G. Mankiw, D. Romer and D. Weil, "A Contribution to the Empirics of Economic Growth," *Quarterly Journal of Economics* 107 (1992): 407-438.

M. Bils and P. Klenow, "Does Schooling Cause Growth or the Other Way Around," *American Economic Review* 90 (2000): 1160-1183.

R. J. Barro, "Economic Growth in a Cross-Section of Countries," *Quarterly Journal of Economics* 106 (1991): 407-443.

W. Easterly, M. Kremer, L. Pritchett, and L. Summers; "Good Policy or Good Luck?" Country Growth Performance and Temporary Shocks," *Journal of Monetary Economics* 32 (1993): 459-483.

R. E. Lucas, "Some Macroeconomics for the 21<sup>st</sup> Century," *Journal of Economic Perspectives* 14 (Spring 2000): 159-168.

Midterm Exam (Meeting 10)

VII. Economics of Ideas (Meeting 11), Chapter 4 of Jones

1. Technology, Intellectual Property Rights and the Industrial Revolution
2. Data on Ideas

P. Romer, "Increasing Returns and Long-Run Growth," *Journal of Political Economy* 94 (1986): 1002-1037.

C. I. Jones, "R&D-Based Models of Economic Growth," *Journal of Political Economy* 103 (1995): 759-784.

VIII. The Engine of Growth (Meetings 12 and 13), Chapter 5 of Jones

1. Basic Elements of the Growth Model

- Growth in the Romer Model
  - Growth vs. Level Effects
2. The Economics of the Growth Model
    - Final Goods and Intermediate Goods
    - Solving the Model and Comparative Statics
  3. Optimal Research and Development

P. Romer, "Endogenous Technological Change," *Journal of Political Economy* 98 (1993): S71-S102.

IX. A Simple Model of Growth and Development (Meeting 14), Chapter 6 of Jones

1. The Basic Model and the Steady State
2. Technology Transfer
3. Understanding Differences in Growth Rates

X. Social Infrastructure and Long-Run Economic Performance (Meeting 15), Chapter 7 of Jones

1. Investment Problem
2. Empirical Evidence
3. Social Infrastructure, Intuition and Growth Models
4. Growth Miracles and Disasters

C. I. Jones, "On the Evolution of the World Income Distribution," *Journal of Economic Perspectives* 11 (Summer 1997): 19-36.

XI. Alternative Theories of Endogenous Growth (Meeting 16), Chapter 8 of Jones

1. The AK Model
2. Externalities and the AK Model
3. Evaluating Endogenous Growth Models
4. What is Endogenous Growth?

S. Rebelo, "Long-Run Policy Analysis and Long-Run Growth," *Journal of Political Economy* 96 (1991): 500-521.

R. J. Barro and X. Sala-i-Martin, "Convergence," *Journal of Political Economy* 100 (1992): 223-251.

N. G. Mankiw, D. Romer and D. Weil, "A Contribution to the Empirics of Economic Growth," *Quarterly Journal of Economics* 107 (1992): 407-438.

XII. Natural Resources and Economic Growth (Meeting 17): Chapter 9 of Jones

1. Land in the Solow Model
2. Nonrenewable Resources
3. Quantifying the Importance of Natural Resources

M. L. Weitzman, "Pricing the Limits of Growth from Minerals Depletion," *Quarterly Journal of Economics* 114 (1999): 691-706.

XIII. Understanding Economic Growth (Meeting 18) Chapter 10 of Jones

1. Why Are We So Rich and They So Poor?
2. What is the Engine of Economic Growth?
3. How Do We Understand Growth Miracles?

XIV. Institutions and Economic Growth (Meetings 19 and 20)

- R. E. Hall and C. I. Jones, "Why Do Some Countries Produce so Much More Output per Worker than Others," *Quarterly Journal of Economics* 114 (1999): 83-116.
- D. Acemoglu, S. Johnson, and J. Robinson; "The Colonial Origins of Comparative Development: An Empirical Investigation," *American Economic Review* 91 (2001): 1369-1401.
- D. Acemoglu, S. Johnson and J. Robinson, "Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution." *Quarterly Journal of Economics* 117 (2002): 1231-1294.

**A student who needs an accommodation based on the impact of a disability should contact the instructor as soon as possible to discuss ways to meet his or her special needs. Please also contact the OSU Office for Disabilities Services (292-3307).**

## Cormier, J. Briggs

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**From:** Elliot Slotnick [slotnick.1@gradsch.ohio-state.edu]  
**Sent:** Thursday, June 12, 2008 11:09 AM  
**To:** Cormier, J. Briggs  
**Subject:** FW: Concurrences Received for New Courses E702-707 & Grad Minor Economics

-----Original Message-----

From: Elliot Slotnick  
Sent: Monday, May 12, 2008 1:30 PM  
To: 'Hajime Miyazaki'  
Subject: RE: Concurrences Received for New Courses E702-707 & Grad Minor Economics

Thanks, Hajime. Dena will hold on to the concurrence letters until we get the actual proposal that appears will be following in the next week.

Then we'll get it all to the Curriculum Committee for review. As for the specific course requests, I'm pretty much out of that loop, but if there are any concerns from over here, Dena will follow up on them with you.

Best,  
elliott

-----Original Message-----

From: Hajime Miyazaki [mailto:Miyazaki.1@osu.edu]  
Sent: Friday, May 09, 2008 5:20 PM  
To: Elliot Slotnick  
Cc: Gene Mumy; Dena Myers; Lakshmi Dutta; K Hallihan  
Subject: Concurrences Received for New Courses E702-707 & Grad Minor Economics

Dear Elliot, thank you very much for your reply. I hope that we have gathered the material needed for the course approval process of new courses, E702-703 (econometrics), E704-705(micro), E706-707(macro), meant primarily to form the core of new Grad Minor in Economics. The course syllabi, including their typo corrected revised versions, are available at <http://artsandsciences.osu.edu/currofc/tracking.cfm?TrackingID=878>.

The only addition that I must submit, I thought, was the concurrence material from related units, which I attach here. (Grad Minor proposal draft was sent to the curriculum committee originally to explain why we are proposing 6 new courses, and why these course concurrences are coming as

part of the Grad Minor concurrences). As I mentioned, contacted units responded by concurring for Grad Minor Program, which included the course concurrences as part of the proposed program. I would appreciate it if

some of these courses, especially E704, can be approved for Autumn Quarter 2008. There is a strong and independent demand, in my view, for E704 even in the absence of Econ Grad Minor implementation. I am submitting

this course petition email to your office, although I was not quite sure if the process reached your office for your approval. Please advise me if

there is any material I should submit to conclude for course approval, and where I should submit them. (I fear that there

still is some misunderstanding on my part about the due curriculum process).

Separately,

I am working hard on finalizing on the main body of our Econ Grad Minor Proposal itself, and I plan to submit it directly to your office in a week. Thank you again for your very generous consideration.

Best Regards, Hajime

Hajime Miyazaki, Professor of Economics and Director of Graduate Studies

At 03:14 PM 5/6/2008, you wrote:

>Thanks, Hajime. I have no quarrel with your account and, for our part,  
>we would (and do) sign off on the courses independent of the approval  
>of  
>the Minor. Similarly, we would approve the Minor contingent on the  
>course development going forward as needed.  
>  
>Best,  
>elliot

>From: asccurrofc@osu.edu  
>Date: Tue, 15 May 2007 09:06:56 -0400 (EDT)  
>Subject: Curriculum Office  
>To: miyazaki.1@osu.edu

>

>Hello,

>

>Your course request for Economics , Graduate Minor in Economics, has  
been

>initiated and added to our database. You can monitor the status of the  
>request by visiting the following link.

>

>

<http://artsandsciences.osu.edu/currofc/tracking.cfm?TrackingID=878>

>

>If you have additional questions, please contact us.

>

>ASC Curriculum Office

>105 Brown Hall, 190 W. 17th Ave.

>asccurrofc@osu.edu

>Phone: 614-292-7226 Fax: 614-688-5679

## Cormier, J. Briggs

---

**From:** Elliot Slotnick [slotnick.1@gradsch.ohio-state.edu]  
**Sent:** Thursday, June 12, 2008 11:14 AM  
**To:** Cormier, J. Briggs  
**Subject:** FW: Concurrences Received for New Courses E702-707 & Grad Minor Economics

**Attachments:** EconGradMinorConcurrences2007May.PDF



EconGradMinorConcurrences2007M...

LETTERS OF SUPPORT

-----Original Message-----

**From:** Hajime Miyazaki [mailto:Miyazaki.1@osu.edu]  
**Sent:** Friday, May 09, 2008 5:20 PM  
**To:** Elliot Slotnick  
**Cc:** Gene Mumy; Dena Myers; Lakshmi Dutta; K Hallihan  
**Subject:** Concurrences Received for New Courses E702-707 & Grad Minor Economics

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Best Regards, Hajime

Hajime Miyazaki, Professor of Economics and Director of Graduate Studies



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>If you have additional questions, please contact us.

>  
>ASC Curriculum Office  
>105 Brown Hall, 190 W. 17th Ave.  
>asccurrofc@osu.edu  
>Phone: 614-292-7226 Fax: 614-688-5679

**Cormier, J. Briggs**

---

**From:** Elliot Slotnick [slotnick.1@gradsch.ohio-state.edu]**Sent:** Thursday, June 12, 2008 11:16 AM**To:** Cormier, J. Briggs**Subject:** FW:

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**From:** Elliot Slotnick  
**Sent:** Monday, June 09, 2008 4:59 PM  
**To:** 'Hajime Miyazaki'  
**Cc:** Dena Myers  
**Subject:**

Dear Hajime,

I am writing to report to you on the Curriculum Committee's vetting of your proposal to offer a Graduate Minor in Economics. Let me start with the bottom congratulatory line that your proposal has been approved "in principle." There remain a few points of clarification that the Committee would like folded in to the proposal in a couple of junctures and I will review it again, for clarity, before passing the proposal on to Randy Smith for vetting by CAA. Specifically:

1. A clarification is needed about your existing MA degrees that are given in conjunction with degrees in other programs. A sentence or two should be added to recognize the existence of such programs and your plans to continue them—contrary to statements in your proposal that you do not offer an MA. This particular concern arose in the context of the supporting letter for your proposal provided by Ingrid Werner.
2. Under "program Resources" you discuss the mix of teaching capabilities that exist in your department to include regular and potentially part-time faculty and, as well, a large cadre of graduate student TAs. You indicate that no new teaching faculty would need to be hired to implement this program and it was understood by the Committee that graduate students would not be teaching courses for the Minor. But that point was not as clearly made as it could be. Please clarify in the body of the proposal under Program Resources that the courses will all be faculty taught if that is, indeed, the case.
3. On page 5 of the proposal there is a typo on line two where course number 705 (not 505) should be listed.

As a general matter, the Committee took note that there were many hard and fast rules for the program that can only "work" if, indeed, courses are delivered as outlined in the proposal. Even the slightest deviation would create enormous problems for students who must plan their course trajectory through the program well in advance. As a general matter, the Committee very much wants to see this program succeed and to get off the ground as soon as possible. Clearly, students are "out there" who are ready to pursue the Minor. Indeed, it is the Committee's hope that, if and when demand warrants it, the current projected course schedule will be accelerated to offer the substantive course couplets each year.

As soon as you've attended to these minor clarifications and revisions in the text of the proposal, Hajime, please return it to me for a final read. I will then send the proposal on to CAA for the final stage in the approval process for this new Graduate Minor program in Economics.

Best,  
elliott

**Cormier, J. Briggs**

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**From:** Elliot Slotnick [slotnick.1@gradsch.ohio-state.edu]  
**Sent:** Thursday, June 12, 2008 11:16 AM  
**To:** Cormier, J. Briggs  
**Subject:** FW: Revised Graduate Minor in Economics Proposal  
**Attachments:** EconGradMinorProposal\$Revised.PDF

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**From:** Hajime Miyazaki [mailto:Miyazaki.1@osu.edu]  
**Sent:** Thursday, June 12, 2008 4:16 AM  
**To:** Elliot Slotnick  
**Cc:** Dena Myers  
**Subject:** Revised Graduate Minor in Economics Proposal

Dear Elliot, again thank you very much for your time, effort and input to help us with the Economics Grad Minor. Attached please find the revised Proposal, which, I hope, adequately addresses the points of concern by the Curriculum Committee. I have assumed too much of a "common knowledge" about the nature and structure of our Ph.D. only program, and I hope that I have provided satisfactory clarification. To indicate specific revisions made, I penned in my explanatory remarks after each paragraph in your email below. I would welcome any comment or question you might have. I am attaching with this email the Revised Proposal as a PDF document. It includes the whole set of all new 700 course syllabi (27 pages) following the proposal core (11 pages of narrative and 19 pages of appendix). Please let me know if you prefer having the course syllabi as a separate document or in MS Word DOC format. Thank you and best regards,

Hajime

FYI, I will be out of the country June 23 (Monday)-27 (Friday) without access to internet or cell phone. I will be on campus every day till June 20 Friday and will be back on campus on Monday June 30 in the late afternoon.

At 04:59 PM 6/9/2008, you wrote:

Dear Hajime,

I am writing to report to you on the Curriculum Committee's vetting of your proposal to offer a Graduate Minor in Economics. Let me start with the bottom congratulatory line that your proposal has been approved "in principle." There remain a few points of clarification that the Committee would like folded in to the proposal in a couple of junctures and I will review it again, for clarity, before passing the proposal on to Randy Smith for vetting by CAA. Specifically:

1. A clarification is needed about your existing MA degrees that are given in conjunction with degrees in other programs. A sentence or two should be added to recognize the existence of such programs and your plans to continue them contrary to statements in your proposal that you do not offer an MA. This particular concern arose in the context of the supporting letter for your proposal provided by Ingrid Werner.

I have added one short paragraph regarding the structure of our Ph.D.-only program and our modus operandi regarding M.A. in Economics. This is the last paragraph on p.3 continuing to p. 4. The paragraph explains that any Ph.D. student at OSU can obtain our Economics M.A. under the same set of condition as our Ph.D. students', that our M.A. is strictly higher than Grad Minor, and that the scope and requirements of our M.A. remain unchanged/unaffected by the proposed Grad Minor. It is also explicated that Grad Minor students are not restricted to taking only new 700-level courses, but are encouraged to take our Ph.D. courses as much as possible to meet the Grad Minor requirements.

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1. Under "program Resources" you discuss the mix of teaching capabilities that exist in your department to include regular and potentially part-time faculty and, as well, a large cadre of graduate student TAs. You indicate that no new teaching faculty would need to be hired to implement this program and it was understood by the Committee that graduate students would not be teaching courses for the Minor. But that point was not as clearly made as it could be. Please clarify in the body of the proposal under Program Resources that the courses will all be faculty taught if that is, indeed, the case.

I have re-edited the one-paragraph section, Program Resources, on p. 8, to explicate that all Grad Minor courses shall be taught by our graduate faculty whose members are all either Rank M or Rank P, thus by definition either tenured or tenure-track faculty members. I hope that I have explained more fully how we plan to teach new 700-level courses within the existing program resources.

1. On page 5 of the proposal there is a typo on line two where course number 705 (not 505) should be listed. I have corrected the error. I also discovered some inconsequential typos and have corrected them in the rest of the proposal.

As a general matter, the Committee took note that there were many hard and fast rules for the program that can only "work" if, indeed, courses are delivered as outlined in the proposal. Even the slightest deviation would create enormous problems for students who must plan their course trajectory through the program well in advance. As a general matter, the Committee very much wants to see this program succeed and to get off the ground as soon as possible. Clearly, students are "out there" who are ready to pursue the Minor. Indeed, it is the Committee's hope that, if and when demand warrants it, the current projected course schedule will be accelerated to offer the substantive course couplets each year.

I realize that the proposed program can be taut in implementation depending of the number of the new 700 courses we can offer every year. I am still sanguine about the prospect of the Grad Minor program because of a sizable potential demand, and because I plan to advise applicants with individualized academic plans. I have actually done a fair amount of such advising every year with a dozen students from other departments, as they try to take our core Ph.D. courses. Also, having taught the Math Camp and the first micro core course over a decade, I maintain a working relational capital with several DGSs. We as well as several other programs have a bona fide stake in seeing our Grad Minor Program succeed. I very much hope that E704 can be approved in time for this coming autumn; I am actually slated to teach E704 as soon as the course approval comes forth.

As soon as you've attended to these minor clarifications and revisions in the text of the proposal, Hajime, please return it to me for a final read. I will then send the proposal on to CAA for the final stage in the approval process for this new Graduate Minor program in Economics.

Best,  
elliot



College of Social and Behavioral Sciences  
1010 Derby Hall  
154 North Oval Mall  
Columbus, OH 43210-1341

Phone (614) 292-8448  
Fax (614) 292-9530

August 8, 2007

Dean Patrick Osmer  
Graduate School  
247 University Hall  
230 North Oval Mall  
CAMPUS

Dear Dean Osmer:

I am pleased to give my support to the proposed Graduate Minor in Economics. The proposal from the Department of Economics is in conformity with Graduate School guidelines and provides access to rigorous, graduate-level economics without requiring students to master the intensive core courses taken by Ph.D. students in Economics. The program is also flexible enough to allow students to tailor the minor in ways relevant to their primary fields of graduate study.

As the proposal makes clear, there is evidence of a reasonable level of demand from various sources for this minor. Many students will be able to satisfy the requirements using already existing courses and will impose no new resource burdens on Economics. Others will want to avail themselves of some of the new 700-level courses, two of which will be offered every year and the others scheduled when justified by expressed demand for them. A very minor alteration of teaching assignments will allow regular faculty to staff these new courses and additional revenue from these courses should easily allow for needed additions to undergraduate teaching.

The proposal is feasible and provides structure for students who want to acquire substantial exposure to graduate level economics. As a result, there is no reason not to enthusiastically support the proposed graduate minor.

Sincerely,

Paul A. Beck  
Dean



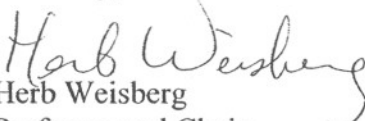
May 14, 2007

Prof. Masanori Hashimoto  
Department of Economics  
410 Arps Hall  
1945 N. High St.  
CAMPUS

Dear Nori,

The Department of Political Science strongly supports the proposed Graduate Minor in Economics. Economics is an important aspect of the program of many of our graduate students, and several take Economics courses. The availability of a formal graduate minor program would be useful for some of these students. We especially appreciate your intention to put in new courses that would be aimed at non-Economics graduate students.

Sincerely,

  
Herb Weisberg  
Professor and Chair



May 29, 2007

Dr. Masanori Hashimoto, Professor and Chairman  
Department of Economics  
410B Arps Hall  
1945 N. High Street  
Campus

Dear Dr. Hashimoto:

The Department of Psychology is pleased to support the proposed Graduate Minor in Economics. Graduate students in our Quantitative Program may be interested in pursuing this minor.

If you need further information, please do not hesitate to contact me at 292-3038.

Sincerely,

A handwritten signature in cursive script that reads "Gifford Weary".

Gifford Weary, Ph.D.  
Professor and Chair  
Department of Psychology

cc: Marilyn Brewer, Director of Graduate Studies  
Department of Psychology



Department of Sociology

College of Social and Behavioral Sciences  
300 Bricker Hall  
190 North Oval Mall  
Columbus, OH 43210-1353

27 May 2007

Phone (614) 292-6681  
Fax (614) 292-6687

*FAX to:  
2-3906*

Prof. Masanori Hashimoto  
Professor and Chair  
Dept. of Economics  
410 Arps Hall  
1945 N. High St.  
CAMPUS

Dear Nori:

I am delighted to endorse the proposal to inaugurate a Graduate Minor in Economics. This looks like an excellent and rigorous program and I suspect at least some of the students in Sociology will be interested in the option. I have consulted with the Director of Graduate Studies and the Graduate Committee in Sociology, who likewise approve the idea.

Please let me know if you need anything additional.

Sincerely,

J. Craig Jenkins  
Professor and Chair of Sociology



# FISHER

COLLEGE OF BUSINESS

THE OHIO STATE UNIVERSITY

## DEPARTMENT OF FINANCE

Professors Masanori Hashimoto and Hajime Miyazaki  
Department of Economics  
410 Arps Hall  
1945 North High Street  
Columbus, OH 43210-1172

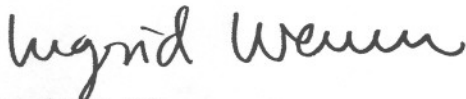
May 30, 2007

Dear Professors Hashimoto and Miyazaki:

Thank you for clarifying the effects that your proposed Graduate Minor in Economics program may have on our students. After these clarification, my understanding is that our PhD students can continue taking the PhD-level 800 sequence in microeconomics, macroeconomics, and econometrics as before, that our PhD students do not have to take the "gate-keeper" course, 704, in order to qualify for the 800 sequences, that our PhD students can gather the necessary credits for a Masters in Economics without having to take any of the new 700 series courses you are adding to the curriculum, and that our PhD students can sit for the regular PhD level comprehensive exams provided that they have taken the appropriate 800 series courses.

With these clarifications, the Fisher College of Business is pleased to concur with your proposed Graduate Minor in Economics program. We wish you the best of luck in your University level approval process, and hope your program will be a great success.

Sincerely yours,



Ingrid M. Werner  
Martin and Andrew Murrer Professor of Finance  
GSCC – Business Administration

**FISHER**  
COLLEGE OF BUSINESS  
THE OHIO STATE UNIVERSITY

DEPARTMENT OF ACCOUNTING AND MANAGEMENT INFORMATION SYSTEMS

May 24, 2007

Professor Hajime Miyazaki  
Director of Graduate Studies  
Department of Economics  
410 Arps Hall  
1945 N. High Street  
CAMPUS

Dear Prof. Miyazaki:

I have had the opportunity to review the Graduate Minor in Economics proposal, and found the rationale to be compelling, the curriculum well-designed, and the administrative arrangements quite sound. I have also discussed it with members of the Graduate Studies Committee in Accounting & MIS. It is with pleasure that I write to you to express our strong support for the proposed Graduate Minor.

As you know, doctoral students in our program are required to attain competency in Economics. While, as your proposal notes, the vast majority of our students have historically had no difficulty demonstrating such competency by completing your informal minor, the proposed Graduate Minor provides an additional option that we would certainly consider offering to our students. Please inform us when it is approved.

Yours sincerely,



Waleed A. Muhanna, Ph.D.  
Associate Professor, and Director of Ph.D. Program in Accounting and MIS  
Department of Accounting and Management Information Systems  
Fisher College of Business  
The Ohio State University

xc: GSC



Department of Consumer Sciences

College of Education and Human Ecology  
231 Campbell Hall  
1787 Neil Avenue  
Columbus, OH 43210-1295

Phone (614) 292-4389  
Fax (614) 688-8133  
Web [www.hec.osu.edu/cs](http://www.hec.osu.edu/cs)

May 21, 2007

Professor Masanori Hashimoto, Chair  
Department of Economics  
410 Arps Hall  
1945 North High Street  
CAMPUS

Dear Professor Hashimoto,

The Department of Consumer Sciences supports the proposal to add a graduate minor in Economics to the graduate curriculum at Ohio State. The proposed minor will be of particular interest to students in the family resource management graduate area within the Department of Consumer Sciences.

Thank you for the opportunity to review the proposal.

Sincerely,

  
Gong-Soog Hong  
Professor and Chair

  
Catherine P. Montalto  
Associate Professor  
Chair, Family Resource Management Graduate Studies Committee



College of Social and Behavioral Sciences  
1010 Derby Hall  
154 North Oval Mall  
Columbus, OH 43210-1341

Phone (614) 292-8448  
Fax (614) 292-9530

August 8, 2007

Dean Patrick Osmer  
Graduate School  
247 University Hall  
230 North Oval Mall  
CAMPUS

Dear Dean Osmer:

I am pleased to give my support to the proposed Graduate Minor in Economics. The proposal from the Department of Economics is in conformity with Graduate School guidelines and provides access to rigorous, graduate-level economics without requiring students to master the intensive core courses taken by Ph.D. students in Economics. The program is also flexible enough to allow students to tailor the minor in ways relevant to their primary fields of graduate study.

As the proposal makes clear, there is evidence of a reasonable level of demand from various sources for this minor. Many students will be able to satisfy the requirements using already existing courses and will impose no new resource burdens on Economics. Others will want to avail themselves of some of the new 700-level courses, two of which will be offered every year and the others scheduled when justified by expressed demand for them. A very minor alteration of teaching assignments will allow regular faculty to staff these new courses and additional revenue from these courses should easily allow for needed additions to undergraduate teaching.

The proposal is feasible and provides structure for students who want to acquire substantial exposure to graduate level economics. As a result, there is no reason not to enthusiastically support the proposed graduate minor.

Sincerely,

Paul A. Beck  
Dean