Economics Department Advising Information for Students

The Economics Department offers both a <u>major</u> in Economics and a <u>minor</u> in Economics. In addition, the Business Department offers an interdisciplinary <u>Business major</u> and <u>Business minor</u> that are of interest to many Economics students.

The Economics Major

The requirements of the Economics major are:

- 1. two introductory courses
- 2. calculus
- 3. four intermediate theory courses (Econ 80a, 82b, 83a, and Econometrics)
- 4. four electives

The courses in items 1 and 3 represent the six core courses. In addition to the six core courses, the four electives, and calculus, there is an optional senior honors thesis.

The introductory courses. The required introductory courses are Econ 10a (Introduction to Microeconomics) and Econ 20a (Introduction to Macroeconomics). (Econ 10a is a prerequisite for Econ 10a. Completion of Econ 2a with a grade of B+ or higher may be substituted for Econ 10a.) The introductory courses are offered each semester. Students must earn a grade of C or higher in both introductory courses to continue with the major. A prospective major who receives a grade of C- or lower must retake the course and will not be allowed to enroll in core courses for which that course is a prerequisite until a grade of C or higher has been attained.

Calculus. All majors must satisfy the calculus requirement. The calculus requirement can be fulfilled in one of three ways: a) completing Math 10a, an equivalent course, or a more advanced calculus course with a grade of C- or above or with a pass/fail grade of P, b) scoring at least 4 on the AP Mathematics AB test or at least 3 on the AP Mathematics BC test, or c) passing a departmental placement exam. Students who have taken a college calculus course elsewhere or who are entitled to Math 10a credit based on their AP or international exam score should transfer those credits to Brandeis. Students who have taken a calculus course and feel they have mastered the material but have not received the necessary math or exam credit may take the departmental placement exam.

The 2-hour placement exam is administered once at the start of each semester and each summer school session. Students who would like to sign up for the exam should contact Leslie Yancich (lesliey@brandeis.edu). Students are encouraged to review prior to the exam; a sample exam is posted here. The exam can only be taken once. Any questions regarding the calculus requirement or the placement exam can be directed to Scott Redenius (redenius@brandeis.edu), the Economics Undergraduate Advising Head.

All students must satisfy the calculus requirement prior to taking the intermediate theory courses (Econ 80a, 82b, 83a, and Econometrics) or any of the upper-level electives. If it is found that a student enrolled in Econ 80a, Econ 82b, Econ 83a, or Econometrics has not successfully completed this prerequisite at any time during the semester, the student will be dropped from the course.

The 80-level theory courses. Students are required to take Econ 80a (Microeconomic Theory), Econ 82b (Macroeconomic Theory), and Econ 83a (Statistics for Economic Analysis). These courses can be taken in any order, but it is recommended that students take Econ 80a and Econ 83a before Econ 82b. (Since most of the upper-level electives have Econ 80a and 83a as prerequisites, this sequencing gives students more flexibility in completing their upper-level electives.) The 80-level theory courses are offered each semester. Students must earn a grade of C- or higher in each course in order to continue with the major. A prospective major who receives a D+ or below must retake the course and will not be allowed to enroll in upper-level electives for which that course is a prerequisite until a C- or better has been attained. Students receiving less than a C- in Econ 83a must retake the course and earn a C- or better before enrolling in an Econometrics course.

Econometrics. Econ 184b or Econ 185a satisfies this requirement. Econ 184b is offered each semester. A grade of C- or better is required. Students are encouraged to take Econometrics as soon as possible after completing Econ 83a. Students who schedule long gaps between the two courses often struggle to relearn statistics while having to master more advanced material.

Electives. Students must take at least 4 additional courses. AT LEAST 2 must be "upper-level" electives, i.e., courses that have one or more of the 80-level theory courses as a prerequisite. In most cases, upper-level status can be inferred from the course number; "100-level" courses usually have 80-level prerequisites. But there are exceptions; Econ 122b (Economics of the Middle East) and Econ 175a (Introduction to the Economics of Development) are not upper-level electives, and new 100-level courses may be created in the future that do not have 80-level prerequisites. With four exceptions, any Economics course and any course cross-listed under Economics in the Bulletin can count toward the major. (Econ 92 (internship), Econ 98 (independent study), Econ 99 (senior honors), and Econ 194 (practicum) do NOT count toward the major.) Appropriate IBS courses can qualify as lowerlevel or upper-level electives. HOWEVER, SOME IBS COURSES DO NOT COUNT AS ECONOMICS ELECTIVES AT ALL. Students who hope to count an IBS course toward the Economics major should check with the Undergraduate Advising Head BEFORE enrolling. There is no "lower-level requirement" - that is, students are free to make all 4 of their electives "upper-level" if they choose. At least 3 of the 4 electives for the major must be courses that have Econ 2a, 10a, or 20a as a prerequisite. Note: The ECON, cross-listed BUS courses, HSSP 104b, and LGLS 127b have Econ 2a, 10a, or 20a as a prerequisite while the other cross-listed courses that may be counted as lower-level electives do not require Econ 2a, 10a, or 20a. Students must earn at least a C- in three of the four electives. In other words, only one elective with a grade of D+, D, or D- may be counted toward the major.

Honors thesis. A student wishing to graduate with honors in Economics must successfully complete a Senior Honors Thesis. In order to undertake an Honors Thesis, the student must have a GPA of 3.50 or higher in his/her Brandeis Economics courses. More information about the Senior Honors Program can be found elsewhere on the Economics Department website.

Miscellaneous Issues for Econ Majors

Minimum GPA for majors. Majors must achieve at least a 2.00 average in their Economics courses. If a student has taken more than ten Economics courses, we use the best ten grades to compute the average. Only Brandeis grades are averaged. (For example, for a student with a summer school course taken elsewhere, we would average the best nine Brandeis grades.) A student who fails a course can take it again; once the student passes the course, we count only the passing grade. Students may also retake courses they have passed. This is advisable when mastery of the course material is important for the achievement of the student's academic goals. If a student passes a course twice, we count the higher of the two grades.

Pass-fail. A course with a P/F grade cannot be used to satisfy the requirements for the major or the minor. The one exception is that the calculus requirement can be satisfied by completing a calculus course with a pass/fail grade of P.

Internship courses, independent studies, practicums, and senior honors. These courses do NOT count toward departmental requirements.

Economics AP and transfer credits. Students who arrive with AP credit in micro (4 or 5) or credit for Introductory Micro taken elsewhere can receive credit for Econ 10a and can complete the major with one fewer course. Students who arrive with AP credit in macro (4 or 5) or credit for Introductory Macro taken elsewhere can receive credit for Econ 20a and can complete the major with one fewer course. Students who arrive with credit for a one-semester Introduction to Economics course should consult the Undergraduate Advising Head regarding appropriate departmental credit.

International exam credit. Students who receive a 5 or better on the International Baccalaureate Economics Higher-Level exam; an A, B, or C on the A-Level Economics exam; or a 14 or better on the French Baccalaureate Economics exam can receive credit for both Econ 10a and 20a. More information is available here. The University does not recognize O-Level or International Baccalaureate Standard Level exams.

Limit on departmental credit for courses taken elsewhere. A student must take at least 5 of the 10 Economics courses required for the major at Brandeis or through an approved study abroad program.

Statistics. Math 36a AND 36b may substitute for Econ 83a. Psychology majors may substitute Psyc 51a for Econ 83a, and Biology majors may substitute Biol 51a for Econ 83a. However, Math 8a, Bus 51b, and AP Statistics can NOT substitute for Econ 83a. NOTE: Students who have had a different statistics course, either at Brandeis or another university (normal for transfer students), often have not had the coverage of regression analysis that Econ 83a provides. In such cases, the student should get a syllabus for Econ 83a and attend the final (regression) section of that course.

Finance courses. A student is not allowed to take Bus 71a (formerly Econ 71a) concurrently with or after completing Econ 171a. The material overlaps too much. A student who has previously taken Bus 71a or Econ 71a is allowed to enroll in Econ 171a subsequently, but students planning to be Econ majors are advised to take only Econ 171a. Note: Bus 71a does NOT count toward the Economics major or minor.

Useful Advice for Econ Majors

The 80-level theory courses. If possible, majors should finish the introductory and 80-level theory courses by the end of junior year to allow time to take upper-level electives. (Students considering studying abroad in their junior year need to satisfy as many requirements as possible in the sophomore year.) Many students take two of the 80-level theory courses in the same semester, though this is not the norm. Those starting the major as juniors may need to take one or more of the 80-level courses in summer school.

BA/MA program. Many Econ majors participate in the 5-year BA/MA program. For students in this program, their senior year is also the first year of the Lemberg MA program, even though they are still undergraduates. They earn their BA in Economics at the end of the fourth year and a Lemberg Program master's degree in International Economics and Finance (MAief) at the end of the fifth year. Students who did not enter Brandeis as Brandeis IBS Scholars but decide they are interested in the BA/MA program apply in the spring of their junior year. More information is available on the IBS's BA/MA program website. The BA/MA application page includes recommended course preparation and is therefore a useful reference for course planning.

Study abroad. Students planning to study abroad should complete as many of the 80-level courses as possible prior to studying abroad. This recommendation is based on the following considerations. Students who have already completed the 80-level courses will be able to take greatest advantage of the Economics classes offered abroad, including upper-level elective offerings. And even if a student does not take any upper-level electives while abroad, there will still be time to satisfy the upper-level elective requirement in subsequent semesters. Some students do take an 80-level course while abroad. However, courses equivalent to the 80-level courses are not offered in all programs and students who take 80-level courses abroad miss out on the opportunity to take electives not offered at Brandeis or electives that might better complement their study abroad experience.

While classes with the prerequisites necessary to count as upper-level electives were offered primarily at UK or British Commonwealth universities in the past, more and more study abroad programs offer students the opportunity to take upper-level electives. However, there are many study abroad programs that only offer lower-level electives.

Major/minor credit for courses taken elsewhere (including study abroad). Departmental credit for courses taken elsewhere (other than credit for AP or international exams) is determined by the Undergraduate Advising Head. Students can avoid problems later by checking in advance on the applicability of planned coursework for the Economics major or minor. Students must also submit the appropriate form to claim departmental credit. The forms can be found here. In the case of summer classes taken elsewhere, the relevant form can be submitted prior to taking the class (recommended). In other cases, the form is submitted after the student has completed the class.

Monitoring progress through the major/minor. Students can monitor their progress through the Econ major/minor using the degree audit in Sage. Any discrepancies between what is recorded in the degree audit and the departmental credit the student thinks he/she has earned should be brought to the attention of the Undergraduate

Advising Head for resolution. The information reported in the degree audit is what the Registrar's Office goes by in awarding degrees, etc., so it is important that this information be complete and accurate.

The Economics Minor

The requirements for the Economics minor are two introductory courses and three electives. The required introductory courses are Econ 10a (Introduction to Microeconomics) and Econ 20a (Introduction to Macroeconomics). (Econ 10a is a prerequisite for Econ 20a. Completion of Econ 2a with a grade of B+ or higher may be substituted for Econ 10a.)

Only Economics courses and cross-listed courses that have Econ 2a, 10a, or 20a as a prerequisite can be counted as electives for the minor. (Econ 92, 98, 99, and 194 do NOT count as electives for the minor.) Currently, the cross-listed undergraduate courses that have Econ 2a, 10a, or 20a as a prerequisite are Bus 6a, Bus 10a, HSSP 104b, and LGLS 127b.

Students wishing to complete the Economics minor can satisfy the introductory course requirements with appropriate AP or international exam credit, just as they can for the major. Students wishing to use other courses or courses taken elsewhere to satisfy the requirements of the minor must get the approval of the Undergraduate Advising Head.

To complete the Economics minor, students must attain a grade of C or better in both introductory courses and a grade of C- or better in each of their three electives. Students must also achieve a GPA of 2.00 or higher in the five courses that constitute their Economics minor.

How to Declare an Economics Major or Minor

There are two ways to declare a major or minor. Many students visit the Economics Office, talk about the program with the Undergraduate Advising Head, get his/her signature on the declaration form, and are then assigned an advisor by the Department's Academic Administrator. Other students seek out an advisor first, have him/her sign the declaration form, and then obtain the Undergraduate Advising Head's signature.

In either case, the student needs to get a Major / Minor Change Request Form from the Economics Office, from Academic Services, or from the Registrar's website. The purposes of this form are to give the student a sense of the scope of the program he/she is declaring and to help the student in planning the remaining semesters at Brandeis. The student lists on the form any Economics (or cross-listed) courses that he/she has already taken, is currently taking, or is planning to take in the next semester. For majors, how the calculus requirement has been or will be fulfilled should also be noted. The student's advisor (or the Undergraduate Advising Head) will take care of the rest.

The Business Minor

The Business Minor consists of six courses (one of which is Econ 2a or 10a). A separate Major / Minor Change Request Form must be completed for the Business Minor. Students who wish to declare a Business minor should see Karen Muise (kmuise@brandeis.edu).

For non-Economics majors, the Business minor is relatively straightforward. For Economics majors things are a little trickier. They may double count no more than two courses (one of which is Econ 2a or 10a). This means that the Economics major/Business minor combination requires a total of 15 distinct courses (including calculus), 4 more than the Economics major alone and 2 fewer than the 17 that would be required for both considered separately.

Students wishing to combine an Economics minor and a Business minor may also double-count no more than two courses. This means that a total of 9 courses are required to complete both minors. In addition, to ensure the Economics minor remains distinct from the Business minor, BUS courses do NOT count as electives for the Economics minor if the student is also seeking the Business minor.

The Business Major

The Business major consists of Econ 2a or 10a plus 10.5 other courses. The "half" course is a module on quantitative methods (Bus 51b) – students who have had Econ 83a are exempt from this requirement. A separate Major / Minor Change Request Form must be completed for the Business major. Students who wish to apply for a Business major should see Hagit Weihs (hagit@brandeis.edu).

For students wishing to combine an Economics major and Business major, at most two other courses (besides Econ 2a or 10a and Econ 83a) can double count for the two majors as follows: Bus 10a (required for the Business major) will count as a lower level elective for Economics and Econ 20a (required for the Economics major) will count as a Business elective.

Students wishing to combine a Business major and Economics minor are also subject to additional restrictions. They can double count no more than two courses (besides Econ 2a or 10a and Econ 83a) for the major and minor, and these students are required to take a minimum of 14 total courses in the major and minor. To ensure the Economics minor remains distinct from the Business major, BUS courses do NOT count as electives for students who combine an Economics minor and a Business major.

Non-Economics Courses that Count As Economics Electives

Cross-listed courses. Any course officially cross-listed under Economics in the Bulletin counts as an elective for the Economics major. Each of the cross-listed undergraduate classes is considered a lower-level elective. Note that not all of these courses have Econ 2a, 10a, or 20a as a prerequisite. Only one course that does not have Econ 2a, 10a, or 20a as a prerequisite can count toward the major. For minors, a course can count as an elective only if it has Econ 2a, 10a, or 20a as a prerequisite. Currently, the cross-listed courses that have Econ 2a, 10a, or 20a as a prerequisite are Bus 6a, Bus 10a, HSSP 104b, and LGLS 127b.

Brandeis International Business School (IBS) Courses. Note that instructor permission is required for ALL undergraduates in IBS courses. For PhD courses, this is mainly an issue of prerequisites. Many IBS courses, usually those that are pre-professional and lack economic content, do NOT count as Economics electives. Students with a question about whether a specific IBS course counts (other than those described immediately below), should contact the Undergraduate Advising Head. Any 300-level (PhD) course counts, and counts as an UPPER-LEVEL elective. The PhD courses most commonly taken by qualified undergraduates are Econ 301a, 302a, 303a, and 304a. Econ 202a, Econ 260a, Fin 201a, and Fin 202a are Lemberg "core" courses that are equivalent in level and content to Economics UPPER-LEVEL electives. Undergraduates who are NOT in the Lemberg program cannot take these courses and must take the corresponding undergraduate Economics courses instead (Econ 161a, 160a, 171a, and 174a, respectively). (The one exception to this rule is Fin 202a, which is currently open to undergraduates since Econ 174a is not offered.) For BA/MA students, these Lemberg courses DO COUNT toward the Economics UPPER-LEVEL elective requirement.

Internships

Many Economics and Business students choose to complete internships either during an academic semester or during a summer, normally after at least two years at Brandeis. Internship opportunities are described at https://www.brandeis.edu/hiatt/jobs-internships. Most Economics majors and minors interested in getting credit for an internship enroll in Bus 89a. The internship is usually done in the same semester the student takes Bus 89a, but the internship can also have been completed during the prior semester or summer. Bus 89a does not provide credit toward the ECON major or minor, but it is a four-credit course that counts as one of a student's thirty-two courses. Classes involve readings, research reports, a term paper, and discussions related to the internships and the "world of work." Interested students should consult Detlev Suderow (suderow@brandeis.edu) for further information. In particular, students are required to keep a weekly journal as they progress through the internship, and they should have a copy of the instructions for that exercise.

There are three additional ways students can get academic credit for an internship. First, a student who studies abroad in a program that has a supervised internship as part of the curriculum can receive credit. Second, a student can enroll in a two-credit Int 89 internship course during the semester or a one-credit Int 92g internship course in the summer school. (The summer school course requires payment of a small amount of tuition). Third, Economics majors who are undertaking interdepartmental programs with economics connections (e.g., Legal Studies, Environmental Studies), and who are doing an internship related to economics to fulfill the requirements of the program, may enroll in Econ 92a. Like Bus 89a, Econ 92a does not provide credit toward the ECON major or minor, but it does count as one of a student's thirty-two courses. Students wishing to take Econ 92a must consult with the Undergraduate Advising Head in order to obtain permission to enroll.