ECMA
ECONOMICS-MATHEMATICS MAJOR
Undergraduate Requirement Check List

General Notes

1) This is a check list for your convenience only. It does not replace the bulletin. For details regarding the requirements below, you must consult the bulletin.
2) You must receive a grade of C- or higher in any class taken for major credit. The ONLY exception is W1105 Principles which you may take Pass/D/Fail and must receive a “P” grade for it to count towards the major. If you have taken a required class P/D/F then you will be required to uncover the P. After receiving a P, you may not retake a course for a letter grade.
3) You must have all transfer credits for economics classes approved by the economics department. For information on what transfer courses will be accepted and how to obtain approval for transfer credits in economics, math and statistics, go to: http://econ.columbia.edu/transfer-credit-information.
4) Econ and Math AP/IB/GCE Credits - CC Students: said credits must appear in your SSOL transcript in order for the department to credit you with the completion of those core courses (Econ W1105, Math V1101-V1102). GS Students: Said credits must be noted in your student file in order for the department to credit you with the completion of those core courses.
5) You will not receive major credit for a course taken before the completion of its pre-requisites.

ECONOMICS Requirements

I. Core Courses
All core courses must be completed by the spring semester of your junior year. You may only take a core course during your senior year with written approval of the economics department.

- ________ W1105 Principles of Economics or AP credits (you must have a grade of 9 or 10 on the AP exam) or IB credits (6 or 7 on the higher level exam)
- ________ W3211 Intermediate Microeconomics (Pre-reqs ECON W1105 and MATH V1201)
- ________ W3213 Intermediate Macroeconomics (Pre-reqs ECON W1105 and MATH V1101)
- ________ W3412 Introduction to Econometrics (Pre-reqs ECON W3211 or W3213, and STAT W1211)

List any departmental approved substitution(s), including transfer credits, for above requirements.

II. Electives
You must take 3 electives in economics at the 3000 level or higher. All electives in the department at the 3000 or 4000 level require BOTH W3211 and W3213 as pre-requisites (and some have additional pre-requisites). See the bulletin for information regarding which courses count as economics electives. Please consult the bulletin for pre-requisites for Barnard elective courses.

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<th>Course No.</th>
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<td>1) ________</td>
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Rules for Barnard Electives, Transfer and AP Credits:

The joint major with Mathematics must take a minimum of 7 lecture courses in economics (this count does not include courses in math and statistics). Students are required to take a minimum of 5 lecture courses in the department. Credits from Barnard 3000 level electives, departmental approved transfer credits, and AP/IB/GCE may be used to fulfill the requirements for the remaining 4 lecture courses.

List number of courses taken in the Economics Department: _______________(minimum = 5)

III. Seminar
One is required from the following: Econ W4911 Micro, W4913 Macro, W4918 Econometrics, W4921 Political Economy, G4421 Problems in the Emerging Market Economy. Barnard seminars are not allowed to be taken to fulfill this requirement. All seminars have the following pre-requisites: W3211, W3213 and W3412. W4921 has an additional prerequisite of W4370.

1) __________  _____________________________________________

List any approved substitution(s), including transfer credits, for above requirements.
__________________________________________________________________
__________________________________________________________________

MATHEMATICS and STATISTICS Requirements (Consult with your math advisor)

I. Required Courses
- You must take one of the following sequences:
  
  _______ MATH V1101 Calculus I (or AP credits)
  MATH V1102 Calculus II (or AP credits)
  MATH V1201 Calculus III
  MATH V2010 Linear Algebra

  Or

  _______ MATH V1207 Honors Math
  MATH V1208 Honors Math

- MATH V2500 Analysis and Optimization

II. Elective courses
You must take three math courses at the 3000 level or above. MATH E1210 Ordinary Differential Equations and MATH V1202 Calculus IV may also be taken to fulfill the elective requirement.
III. Statistics

You must take one of the following courses:

- SIEO W4150 Intro to Probability and Statistics
- STAT W3105 Introduction to statistics: probability models and STAT W3107 Statistical inference
- SIEO W4105 Probability and STAT W4107 Statistical inference

Note:
1) Students who fulfill the statistics requirement with STAT W3105/STAT W4107 or with SIEO W4105/STAT W4107 may count STAT W3105 or SIEO W4105 as one of the three required mathematics electives.

2) If you choose either of the one year sequence (W3105/W3107 or W4105/W4107), then you must complete the year long sequence prior to taking W3412 Econometrics. You will receive elective credit for the probability course.

Students who have questions about any of the above requirements should first consult the bulletin or the online FAQ page at: http://www.columbia.edu/cu/economics/undergraduate/s5_4_3.html
If after consulting the bulletin and the FAQ page you still have questions, then contact: econ-advising@columbia.edu.