1. Please describe and provide a rationale for the proposed change to the existing degree:  (revised 2/4/14)

   The Department of Economics proposes to introduce a new empirical economics sequence (statistics and econometrics) as part of the core requirements for the undergraduate Major in Economics. Currently majors are required to take one statistics course (EC305, or an approved alternative statistics class), and econometrics is offered as an elective (EC414). We feel that our students would be better served if econometrics were made a requirement for all Economics majors (which is consistent with most of our peer institutions). We live in a data-driven world, and it is the unanimous feeling of the department that our majors would have a better understanding of their world and economic policy, in addition to being employable in a wider range of settings, if they had more empirical training.

   Now, rather than simply adding EC414 as a requirement, we have decided that a better pedagogical product would be a full-year, integrated sequence in statistics and econometrics which we will call “Empirical Economics 1 & 2.” Last year the CAS Faculty approved these two new courses, EC203 and EC204. This academic year, these courses are offered as alternatives to EC305 and EC414, but starting next academic year (AY2014-15) we plan to no longer offer EC305 and EC414. (Please note that while EC203 will cover similar statistical topics as were covered in EC305, the class will be more highly applications driven, with statistical concepts introduced where possible in the context of economics applications, and with extensive analysis of data files using both Excel and the statistical software program Stata.) We would like now to require EC203/204 for all newly declared majors. Current majors who have not taken the required EC305 class will be required to take EC203 (or EC303, please see below) instead, and would be allowed to take EC204 (or EC304, also please see below) as an economics elective. In order to keep the total course count for an economics major unchanged, we would reduce the number of required electives for newly declared majors from the current SIX courses to FIVE elective courses.

   Furthermore, because the mathematical and analytic sophistication of our 800+ majors is quite heterogeneous, we would like to attempt to better address this by offering a more
theoretically advanced empirical (statistics + econometrics) sequence, numbered EC303/EC304 and titled “Empirical Economics Analysis 1 & 2,” which students may take as an alternative to the EC203/EC204 sequence so long as they have first completed one semester of calculus (calculus would not be a prerequisite for the EC203/4 sequence). Furthermore, the EC303/4 sequence will be required for the joint Major in Economics & Mathematics (and strongly recommended for students pursuing the BA/MA in Economics). Crossover between the two (203/204 and 303/304) sequences will not normally be allowed: Students who take EC 203 will continue in EC 204; and those who begin the more advanced sequence with 303 will be expected to complete it with EC 304. In exceptional cases, and only in the context of individual advising, a student who has struggled in EC 303 may be permitted to complete the two-course requirement with EC 204. Conversely, a student who has excelled in EC 203 and has the requisite calculus background may be well (and carefully) advised to consider EC 304 as her or his second course.

We will also continue to accept the same statistics courses in Mathematics (MA214) and SMG (SM221) that we currently accept as substitutes for EC305 as substitutes for EC 203. Since students coming to EC 204 from SM 221 and MA 214 (or entering BU with transfer credit for statistics) may not have had the same experience of beginning to use Stata as classmates coming from EC 203, the department will take a proactive, multipronged approach to bringing everyone quickly up to speed. Print materials will be made available (in addition to the econometrics textbook’s Stata supplement) along with links to instructional videos on Stata’s own YouTube channel (http://www.youtube.com/watch?v=L8iiL8hRc). Basics will be reviewed for the benefit of all students at the start of EC 204, both by the faculty instructor and in special TF-led sessions.

Finally, students may not get credit for both EC203 (or MA 214 or SM 221) and EC 303 and, similarly, may not get credit for both EC204 and EC304.

The Economics faculty approved these modifications to the Major on November 6, 2013. The vote was unanimous.

2. Please describe how the proposed change(s) advances the Strategic Plan of the school/college and of the University plan:

As affirmed in the College of Arts & Sciences Strategic Plan, “CAS is aware that numerical, quantitative, and computational competency are increasingly considered essential skills for educated adults. CAS therefore is committed to ensuring that all of its students acquire these skills.” The introduction of the proposed two-course sequence in empirical analysis is fully consistent with this goal of “Quantitative Literacy at Boston University” and will put the undergraduate Economics Major fully in line with the College’s commitment to educate our students to thrive in our increasingly data-driven world.

3. Please list the program requirements for the current and revised programs: (expand the table as needed and denote new courses in bold print)
<table>
<thead>
<tr>
<th>Current program: Major in Economics</th>
<th>Revised program: Major in Economics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microeconomics Prerequisite: CASEC 101</td>
<td>Microeconomics Prerequisite: CASEC 101</td>
</tr>
<tr>
<td>Macroeconomics Prerequisite: CASEC 102</td>
<td>Macroeconomics Prerequisite: CASEC 102</td>
</tr>
<tr>
<td>9 Principal Courses</td>
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</tr>
<tr>
<td>Economic Statistics (one course): CASEC 305, CASMA 214, or SMGSM 221</td>
<td>Empirical Economics: (2 courses): CASEC 203 or <strong>CASEC 303</strong> or CASMA 214 or SMGSM 221; and CASEC 204 or <strong>CASEC 304</strong></td>
</tr>
<tr>
<td>6 Additional Courses in CASEC 3@, 4@, 5@, 6@. Except CASEC 300:310</td>
<td>5 Additional Courses in CASEC 3@, 4@, 5@, 6@. Except CASEC 300:310</td>
</tr>
<tr>
<td>One course in Calculus</td>
<td>One course in Calculus</td>
</tr>
</tbody>
</table>

4. **Please list learning outcomes for the revised program:**

Students graduating with a Major in Economics should be able to:

1. Understand economic theory, both microeconomic and macroeconomic, and be able to apply these models to evaluate policies and real-world events.
2. Demonstrate focused expertise in one or more areas of economics.
3. Locate the necessary data to analyze policy and evaluate world events, and analyze data using appropriate econometric methods.

The expectation is that students with a relatively high level of mathematical sophistication will meet these same general goals, but that, by taking EC 303/304, they will do so with greater mastery of the underlying statistical theory.

5. **How does the change place your program in the context of programs at peer institutions?**

Our program will now be more consistent with programs at our peer institutions. For example, the following programs require a class in statistics and a class in econometrics: Boston College, Tufts, Brandeis, Columbia, University of Maryland, University of Virginia, University of Rochester. Many more examples could be given.

6. **How does the change affect other academic units?**

No direct effects. Cognate comment is, however, attached from the CAS Department of Mathematics & Statistics and from the School of Management. Courses from both of those units can be substituted for EC 203, as previously for EC 305 (see above), and formal notification serves significant student interest in dual degree and major/minor options.

7. **How will you notify current students of the proposed changes and implement the requirements?**
Emails, EC advising, official department documents specifying requirements, and postings on the department site, CAS Bulletin (2014/2015) and CAS Advising

8. Please document any implications that the change has on professional accreditation or licensure at the program or school/college level:

None

9. Please list the resources needed including IT, new faculty, new staff, reassignment of faculty from existing courses to new ones (especially if the existing course(s) is not being removed from the bulletin), technology enhanced classrooms, office space, and other facilities:

No new physical resources (classrooms, IT, etc.) or faculty expertise is needed.

We will no longer offer EC 305 or EC 414. But we will be staffing a net addition of up to two courses per academic year. We normally offer 6 EC305 per AY (and two EC414). Since Econometrics is now required, we will need 12 classes rather than 8 per AY. We plan the following:

Fall: 3 sections of EC203  
2 sections of EC204  
1 section of EC303

Spring: 2 sections of EC203  
3 sections of EC204  
1 section of EC304

Partially offsetting that increase of four sections, since the number of required EC electives will be decreased by one, we are also planning to offer one fewer elective each semester (and possibly two fewer some semesters) largely by offering predictably less popular electives once per year rather than every semester.