

EASTERN MICHIGAN UNIVERSITY
DIVISION OF ACADEMIC AFFAIRS

REQUEST FOR INCLUSION OF A COURSE IN THE
GENERAL EDUCATION PROGRAM:
EDUCATION FOR PARTICIPATION IN THE GLOBAL COMMUNITY

DEPARTMENT/SCHOOL: MATHEMATICS COLLEGE: ARTS AND SCIENCES
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1. Subject Code, Number, and Title: MATH 110 Mathematical Reasoning
2. Credit Hours three
3. Catalog description: An introduction to quantitative reasoning, with the aim of developing the capacity to comprehend and analyze the quantitative information that is prevalent in modern society. Topics include mathematical modeling, basic probability and statistics, and practical applications.
4. This course is (check one):
 - an existing course with no revisions (need not go through the input system)
 - an existing course with revisions (attach this form to Request for Course Revision form)
 - a new course (attach this form to Request for New Course form)
5. Check the General Education requirement this course is intended to meet. If the course is to be proposed for more than one requirement, submit a separate form for each one.
 - Effective Communication
 - Quantitative Reasoning (*QR designation*)
 - Writing Intensive (*WI designation*)
 - Perspectives on a Diverse World
 - Global Awareness
 - U.S. Diversity
 - Knowledge of the Disciplines
 - Arts
 - Humanities
 - Science
 - Social Science
 - Learning Beyond the Classroom (*LBC designation*)

6. Rationale. Provide a concise, clear, jargon-free explanation of why this is a General Education course and how it fits into this specific requirement. This rationale should appear on the general course syllabus provided here and should be included in specific course syllabi given to students.

This course will provide students with ways to approach the quantitative information that they are certain to encounter in later coursework at Eastern Michigan University, throughout their careers, and in daily life. The emphasis is on learning methods for comprehending, analyzing and using quantitative information and on techniques for using data to inform decisions about real world events and problems. For these reasons, MATH 110 will count for the **Quantitative Reasoning** requirement in the General Education program *Education for Participation in the Global Community*.

7. Clearly and concisely explain how this course meets each of the General Education outcomes for the requirement checked in number five (all outcomes should be addressed). To do this, (a) list the General Education outcomes for the requirement and explain how the course meets each outcome; and (b) explain, in general terms, the method(s) of evaluation to be used in the course and how these methods assess the degree to which students have met the General Education outcomes for this requirement.

Topics covered in MATH 110 will include mathematical modeling and introductory statistics. Other topics, such as financial mathematics and geometric scaling, may be introduced as the instructor chooses. While the course will focus on problem-solving and modeling, instructors will take the opportunity to work with students on essential arithmetic skills such as percentages, unit conversions, estimation and order of magnitude calculations. In addition, students will use a spreadsheet program to both analyze data and present their conclusions about a particular problem.

Methods of evaluation for MATH 110 will include some of the following: quizzes, tests, graded homework problems, projects, in-class exercises, presentations, group problem-solving tasks, and a final exam. Projects may result in a term paper, or may be group projects, in-class activities or computer labs. The outcomes of group projects and in-class projects can be assessed with follow-up quiz or exam questions, which present a similar situation and test if the individual student has mastered the concepts involved.

Outcomes for quantitative reasoning:

Students will learn to solve real-life problems using a mathematical modeling process. They will learn to...

1. Identify an appropriate model.

a. Students will learn techniques for analyzing a problem and determining what type of model will best suit the scope of the problem. Examples will be presented which allow for models of varying complexities, depending on the desired level of accuracy. For example, compound interest is by nature exponential, but in some situations a linear model is quite adequate. Another example is a sample survey. At the simplest level, it is a direct proportion model. But a probabilistic analysis leads to a confidence interval, which is a much more informative conclusion.

b. Assessment of this outcome can be via direct questions on quizzes and tests, where a situation is presented and the student determines what an appropriate model will be; and in projects, where an open-ended problem is presented and the student decides what mathematical approach to take.

2. Identify and discuss assumptions.

a. When analyzing any real-world situation with a view to setting up a mathematical model, it is necessary to make various assumptions which do not actually hold in the real-world scenario. Generally speaking, different assumptions lead to different models (see Outcome #1), and stronger assumptions lead to simpler models. Typically, when a new scenario is presented, the instructor will lead the class through the making of enough assumptions in order to simplify the situation so that a model can be applied to it. When a student applies such a model, he/she should always be aware of what assumptions were made, and what the significance of having made these assumptions is. See Outcome #12 below.

For example, consider an analysis of casino gambling. In a typical casino, there are numerous games offered, and bets of varying sizes are allowed. In order to come up with a tractable model, we might focus on one simple game played a large number of times. We can analyze this using the Central Limit theorem, and gain an understanding of how the risk to the casino decreases as the total number of bets increases. But it is important to realize that this conclusion does not apply if the same amount of money is placed in a small number of very large bets. So the assumption made in order to come up with a simple model leads to conclusions which may be valid for a casino which attracts mostly small-stakes bettors, and may not be valid for a casino which attracts a number of “high rollers.”

Every time a model is presented in class, the instructor will outline the assumptions that need to be made in order for the model to be applicable. Again, see Outcome #12. Homework problems and projects will often ask the student directly to list any assumptions that are necessary in order to make the model apply.

b. This outcome can be assessed via direct questions on quizzes and tests, where a situation is presented and the student discusses the assumptions he/she might make in selecting an appropriate model; and also in the write-up of projects, where students will be expected to list and discuss the assumptions that they have made.

3. Collect or generate appropriate data.

a. In the various examples discussed in class, students will learn to identify what types of data need to be collected in order to answer the question that has been presented. Students will get experience collecting or generating data in projects that involve estimation or simulation; in projects that allow for data to be found on the Internet; and in projects involving data collection, such as survey sampling

b. Identification of suitable types of data can be assessed using direct questions on quizzes or tests, and actual data collection or generation will be part of one or more projects during the semester.

4. Analyze a situation using arithmetic, geometric, algebraic, and probabilistic or statistical methods.

a. The modeling explored in class will utilize a wide variety of methods. Probabilistic methods will be used to understand the concept of margin of error, or to analyze casino gambling; algebraic methods will be needed in order to understand and use the various linear and nonlinear models that are studied. Geometric methods are used to create visual representations, and are used in problems involving estimation and in scaling problems. Arithmetic methods will be needed in almost all examples.

b. This outcome can be assessed with quiz and test questions, and will also be an essential part of the projects.

5. Estimate answers.

a. Estimation is a skill that instructors will focus on throughout the course. Estimation is very important in determining the reasonableness of a proposed solution—especially when we rely so heavily on technology as a tool in problem-solving. When students consider a problem to be analyzed by any of the methods studied, they will be asked to estimate an answer as part of the initial modeling process. As an example, part of a project involving the Consumer Price Index might ask students to forecast the value of the minimum wage in 2010 on the assumption that it is not raised from its current level. With an assumption of a 3% rate of inflation, students could estimate that its value (in 2005 dollars) would go down, but by no more than 15%; so an estimated answer would be \$4.38 per hour in 2005 dollars.

b. Estimation will be tested on quizzes and tests, and provision of an estimated answer may be part of the rubric for grading a project.

6. Propose and evaluate solutions.

a. As students develop mathematical models for real-world data, they will write a narrative interpreting their results. Models generated mathematically need to be interpreted in a real-world context—students will use the model to propose solutions to real-world problems and will evaluate these solutions for their appropriateness to the problem that gave rise to the model. Returning to the casino example mentioned above, using a model based on a single game with a bet of \$1 and a mean payoff of 5¢ for the casino, students would conclude that when 100,000 bets are placed, the casino expects to net between \$4,400 and \$6,200. They would then discuss how this would relate to a real casino on a \$100,000 night, where bets of a variety of sizes are placed on a variety of different games.

b. Students will be asked on quizzes and tests to give solutions to models that have been discussed in class. Finding solutions to specific mathematical models can be tested on graded homework, quizzes, tests and projects. Students can be asked to evaluate proposed solutions in all of these formats, briefly in quiz and test questions, and in greater depth in graded homeworks and on projects

7. Predict outcomes in other situations based on what they have learned from their analysis.

a. Once a situation has been analyzed and a model set up, the results can be used to make predictions as to what might happen in other situations. Using problem situations and small-group projects, students will be encouraged to go beyond the given situation and see how the model might apply to similar situations. For example, once students have completed a project such as the minimum wage scenario outlined above, they could go on to consider if a similar analysis applies to someone who lives on a fixed income, or to someone who lives on social security. They could also discuss the implications of inflation as part of a project on saving for retirement and retirement annuities.

b. This might be part of the rubric for grading a project, and also might be the basis for post-project quizzes, which are designed to test if a student has fully learned the concepts illustrated by a particular project.

8. Understand and communicate quantitative relationships using symbols, equations, graphs, and tables.

a. All of the topics covered in the class will involve symbols, equations, graphs and tables. Students will learn to use symbols effectively, to understand and be able to effectively use equations, and to use and understand graphs and tables. Use of a spreadsheet will enhance all of these, as students will see how an equation becomes a spreadsheet formula, and will also be able to produce research-paper quality tables and graphs

b. Evaluation of this outcome will occur in all of the standard types of assessment used in the class—graded homework, quizzes, tests and projects.

9. Share their findings in oral and written reports using appropriate mathematical language.

a. Students will present an analysis of a quantitative situation in written and/or oral form. In working up to this, they could work in groups on a problem and then share their work on an overhead with the rest of the class. Students will learn to use a spreadsheet and to incorporate spreadsheet tables and graphs into a written report, or to present them in class and incorporate them into an oral report.

b. The instructor can assess how students talk about the problems in their group work and evaluate use of appropriate language in essay questions on tests and quizzes. At least one project per semester will involve a full-length written report, with graphs and tables as needed.

10. Write summaries to explain how they reached their conclusions.

a. Students will learn to summarize the work they have done in analyzing a given situation. Students might be asked to reflect on a problem solving task they have accomplished and explain to each other or the instructor how they went about solving the problem. As part of the write-up of a project they might write a letter to a fictitious friend about the problem and their approach.

b. This will be explicitly called for in projects write-ups, and will be evaluated when projects are graded.

11. Draw inferences from a model.

a. Once the model has been set up and a solution found, the solution has to be related back to the original problem. Students will learn to do this in the context of the many different examples that will be presented during the semester. For example, in the minimum wage project mentioned above students might conclude that the minimum wage should be adjusted because it is currently at a historic low once adjusted for inflation.

b. This outcome can be evaluated using quiz and test questions, and when grading projects.

12. Discuss the limitations of the model.

a. An essential part of the discussion of any model will be an analysis of the assumptions made in constructing it, and its limitations as a model for the given situation. Students will learn to look for hidden assumptions and to examine the predictions of a model with a degree of skepticism. They will see examples of questionable use of quantitative data, and will learn thereby to be skeptical of conclusions presented to them in the media and in other aspects of their lives.

b. This outcome will be evaluated in quiz and test questions, graded homeworks and on projects.

8. Attach a syllabus (1-inch margins and 10-12 pt. font). The syllabus must include the rationale from #6 above and clearly reflect the outcomes and methods detailed in #7 above.

MATH 110 – MATHEMATICAL REASONING

Syllabus

{Note: This is a generic syllabus. Some parts will be common to all sections. Others will vary by instructor, and are provided here as examples, for completeness. These parts are enclosed in square brackets []. Other explanatory notes that would not be part of an actual syllabus, such as this note, are enclosed in braces { } .}

Course Catalog Description

An introduction to quantitative reasoning, with the aim of developing the capacity to comprehend and analyze the quantitative information that is prevalent in modern society. Topics include mathematical modeling, basic probability and statistics, and practical applications.

Prerequisite: Placement or at least a C in Math 098 or Math 098B, or any of Math 104, Math 105, Math 107, Math 109, Math 112 or Math 120.

Goal of the Course

MATH 110 is designed to give students an appreciation for and some facility with ways in which mathematics can be used in real-world applications. The goal of the course is to allow students to apply the mathematical skills they have learned previously to problem situations that will be of interest to them and of some relevance in their lives.

Course Objectives

Upon completing the course, students should be able to:

- Carry out the steps of a mathematical modeling process.
- Apply a variety of mathematical models to problem situations.
- Analyze data using descriptive statistics.
- Calculate and interpret discrete probabilities.
- Use the normal distribution.
- Apply statistical criteria such as significance tests, correlation and confidence intervals.

- Explain the meaning of statistical criteria such as significance tests, correlation and confidence intervals.
- Present a written or oral report outlining a problem situation, a proposed mathematical model, and a solution, together with a discussion of both the assumptions upon which the model is based and the limitations of the model.
- Analyze data using a spreadsheet program.
- Use a spreadsheet program to produce tables and graphs, and include them in a written report.

General Education

This course will provide students with ways to approach the quantitative information that they are certain to encounter in later coursework at Eastern Michigan University, throughout their careers, and in daily life. The emphasis is on learning methods for comprehending, analyzing and using quantitative information and on techniques for using data to inform decisions about real-world events and problems. For these reasons, MATH 110 will count for the **Quantitative Reasoning** requirement in the General Education program *Education for Participation in the Global Community*.

Text: {We have not yet chosen a specific text. Some possible texts are:

For All Practical Purposes: Mathematical Literacy in Today's World, 6th ed., by COMAP (W. H. Freeman, 2003).

Using and Understanding Mathematics: A Quantitative Reasoning Approach, 3rd ed., Jeffrey Bennett and William Briggs, (Addison-Wesley, 2005).

The Mathematical Palette, 3rd ed., Ronald Staszko and Robert Bradshaw, (Brooks/Cole, 2005).

The Nature of Mathematics, 10th ed., Karl J Smith, (Brooks/Cole, 2004). }

Calculators

You are expected to bring a calculator to class. You may need to use calculators on assignments, quizzes, and tests.

Spreadsheets

Some assignments will involve using a spreadsheet program. You should have access to Microsoft Excel in many of the computer labs on campus, but you may use another program if you prefer. [If you use Excel, I would recommend installing the Analysis Toolpak. If you have a menu item for Data Analysis under the Tools menu, it is already installed. If it is not installed, select Analysis Toolpak in the Add-Ins submenu of the Tools menu.]

Assessment {Policy depends on individual instructor}

[We will use the following grading scale:

A	90 - 100
B	80 - 89
C	70 - 79
D	60-69
E	Below 60

Your grade will be computed from a weighted average, with the following components:

Homework, In-Class Work and Projects	40%
Quizzes	10%
Tests (3)	30%

Final

20%]

Attendance & Class Participation

{Policy depends on individual instructor}

Homework, Quizzes, and In-Class Work

{Policy depends on individual instructor}

Projects

Projects will vary from one-page writeups of in-class activities to full-length reports involving several pages of reporting and analysis. Some will involve using a spreadsheet program and producing tables and graphs to paste into the report.

Tests

{Policy depends on individual instructor}

Written work

Written work must be presented in a format commensurate with that expected in any other college class. You must write in complete sentences, with correct spelling, grammar and punctuation. Some work may be hand-written or word-processed, while other work must be word-processed.

Makeup Policy

{Policy depends on individual instructor}

Extra Help

[You are always welcome to meet with me if you are having difficulties with course material. In addition, there is a math-tutoring center where you can get individual help in Room 220 of Pray-Harrold. The tutoring center is open 6 days a week. You also can drop by the Math Den in 501 Pray-Harrold, which has a library of basic math books and a place to study with other math students.]

Special Needs

If you have learning disability or other physical impairment that may affect your ability to do the work in this course, please let me know as soon as possible so that we can make appropriate arrangements. See the link at www.math.emich.edu/access.services.html for information about support services. In addition, international students should check the information at www.math.emich.edu/SEVIS.html concerning registration.

Academic Honesty

[I expect all students to abide by the University's code of conduct, and in particular to abide by rules concerning academic honesty. In order to assess how the class is going and what you have learned, I need to see your own work: your own words and the details of your own computations. You may work with other students or math tutors on your assignments, but you must do an independent write-up. I will give failing grades for academic dishonesty.]

Course Outline

{ A typical course outline might be as follows:

1. Introduction to mathematical modeling
2. Linear and exponential models

linear models

linear regression

exponential growth

exponential regression

3. Probability Theory

probability models

rules of probability

normal distribution

central limit theorem

4. Statistics

descriptive statistics

meaning of regression

confidence intervals

comparison with traditional deductive logic

5. Geometric models

length, area and volume (review)

scaling

6. Financial models

simple and compound interest

consumer credit

}

Here follows a sample project and grading rubric.

MATH 110 INSTRUCTIONS FOR EXCEL LAB 3

50 points

In this project you will explore the costs associated with credit card purchases and mortgages.

After a company issues you a credit card you can use it to pay for items you want to purchase. At the end of the billing cycle, usually one month, the company presents you with the “New Balance” consisting of the sum of all the purchases made. If you pay this balance in total by the due date, you don’t owe any more money and your card is paid off. If you pay less than the new balance, the remaining difference is subject to finance charges. The total of those charges and the remaining balance will be added to the new purchases in the following month and form the next “New Balance”. The company only requires you to pay a “Minimum Payment”, the amount of 2% of your New Balance owed, but never less than \$10. You can pay more if you are able to do that. The finance charges are computed as daily compound interest based on the prevailing annual percentage rate (APR) and the balance owed.

1. To familiarize yourself with the situation, assume that you have used your credit card to purchase a computer for \$800 and are able to make monthly payments of \$200. The card charges an APR of 16%. Compute by hand the New Balances for the following months until the card is paid off. How much did you pay all together for your computer? How much did you pay in excess of the purchase price? This last amount is called the “Total Finance Charges”.
2. Design a spreadsheet, which computes the New Balances for you. Type your name in the upper left hand corner. It should have the following features:
 - a. A special cell to enter the APR
 - b. A special cell to enter the initial purchase amount
 - c. You need to be able to tell after how many months the card is paid off.
 - d. You need to be able to read from the worksheet how much you paid in Total Finance Charges once the loan is paid off.

Attach printouts of your spreadsheet (with and without formulas displayed) to your paper. Make sure that your worksheet gives you the same answers as your hand computation from part 1.

3. Explain how you constructed your spreadsheet model. What assumptions did you make in addition to the information specified above?
4. Adjust your spreadsheet to compute how much Total Finance Charges you pay if you only pay the Minimum Payment each month. Explain what adjustments you made.
5. Use the spreadsheet to compute the Total Finance Charges if the credit card company uses an APR of 25% and you only pay the Minimum Payment each month.

A mortgage is a special credit to purchase a house. The house is given as security and the monthly payments are determined so that the balance is paid off after a specified time.

6. Collect at least 3 different rates for 30-year mortgages charged by banks and find the purchase price of a house you might want to buy. Give the sources where you found your information.
7. Based on your information from item 6 modify your original spreadsheet to compute the mortgage balances for your house purchase. (You will need to estimate the monthly payments so that the mortgage is paid off after 30 years.) Write a letter to a friend telling them about your planned house purchase, explaining the details of the financial set up and explain to them what the Total Finance Charges of your mortgage are. Make sure you mention possible strategies for reducing the Total Finance Charges in the future.

MATH 110 EXCEL LAB 3 COVERSHEET

50 points

Your Name

Item (points available)	Points obtained
1. Correct Hand Computations (3)	
2. Printout of spreadsheet with correct computations (12) <ul style="list-style-type: none"> a. Special cell for APR b. Special cell for purchase amount c. Contains information about length of time d. Contains information about Finance Charges Printout with formulas displayed	
3. Explanation of the spreadsheet model and assumptions made (5)	
4. Results for minimum payments (5) Explanations of adjustments made	
5. Results for minimum payments with 25% APR (5)	
6. Data collected and sources given (5)	
7. Letter to a fictitious friend (15) Creative scenario and design Correct explanation of the terms of a 30 year mortgage to purchase a house including the monthly payment, interest rate and Total Finance Charges Explanation of strategies to reduce Total Finance Charges	

Please submit all materials in electronic form.

Action of the Department/College

1. Department

Vote of department faculty: For _____ Against _____ Abstentions _____

Department Head _____ Date

2. College

College Dean _____ Date

Action of General Education Advisory Committee

Vote of General Education Committee: For _____ Against _____ Abstentions _____

Chairperson, General Education Advisory Committee _____ Date

Approval

Associate Vice-President for Undergraduate Studies and Curriculum _____ Date

REQUEST FOR COURSE REVISIONS

TYPE OF REVISION: (CHECK ALL THAT APPLY.)

Course Number/Subject Code
 Course Title
 Credit Hours
 Course Description
 Prerequisite/Corequisite
 Restriction

DEPARTMENT: MATHEMATICS

DEPARTMENT CONTACT: GISELA AHLBRANDT

COLLEGE: ARTS & SCIENCES

PHONE: 7-1444

CONTACT EMAIL: gisela.ahlbrandt@emich.edu

DIRECTIONS: COMPLETE SECTION A AND SECTIONS B1a, B2a, B3a B4a, B9, B10 AND B11. COMPLETE ONLY THE REMAINING PARTS OF SECTION B THAT CONCERN THE REVISIONS CHECKED ABOVE. FOR ASSISTANCE CONTACT THE COURSE AND PROGRAM DEVELOPMENT OFFICE.

A. Rationale for Revision:

In revising MATH 110 to meet the new General Education outcomes for Quantitative Reasoning, we have had a careful look at the catalog description and prerequisites for the course, and are proposing these revisions as more suited to the course both as it is currently taught and as it will be taught when it is part of the new General Education program. Elementary logic is an optional topic in the course, and will remain so, but is not covered in all sections of the course. Mathematical modeling is infused throughout the course as it is currently taught, and is explicitly called for in the Quantitative Reasoning outcomes for the new General Education program.

The "true" prerequisite for the course is "Placement or at least C in MATH 098 or 098B," and is unchanged. The laundry list of other courses is there simply to help students, especially transfer students, to negotiate the prerequisite enforcement at time of registration. Many transfer students come to EMU with a transfer credit in a course such as MATH 104, 105 or 112, and those that do will have an easier time registering for MATH 110 should they desire to do so. We are removing MATH 120 from the list because we can imagine no scenario in which someone with credit in MATH 120 but not one of the other courses would be taking MATH 110. If this eventuality does occur, we will be able to override the prerequisite for that student.

The change in restriction is due the "convergence" of MATH 109 and MATH 110. Because of the new General Education requirements, MATH 109 will be renamed MATH 110E, and the two courses will become more similar than they are already. For this reason, students who are Elementary Education Intent, and students in any of the Elementary Education and Special Education Elementary programs should not take MATH 110, as all will be required to take MATH 110E (formerly MATH 109).

B. Course Information

1. a) Current Subject Code and Course Number: MATH 110

2. a) Current Course Title: Mathematical Reasoning

3. a) Current Credit Hours: 3

4. a) Current Catalog Description:

An introduction to contemporary mathematical thinking for the non-specialist, with the aim of developing the capacity to engage in logical thinking and to read critically the technical information that is so prevalent in modern society. Topics include elementary logic, basic probability and statistics, and applications.

b) (If new) Proposed Catalog Description (Limit to approximately 50 words):

An introduction to quantitative reasoning, with the aim of developing the capacity to comprehend and analyze the quantitative information that is prevalent in modern society. Topics include mathematical modeling, basic probability and statistics, and practical applications.

5. (Complete only if prerequisites are to be changed.) List Current and Proposed Prerequisite Courses by subject code, number and title. Students must complete prerequisites before they can take this course.

Current:

Placement or at least C in MATH 098 or 098B. or
MATH 104. MATH 105. MATH 107. MATH 109
or MATH 120

Proposed:

Placement or at least C in MATH 098 or 098B. or
MATH 104. MATH 105. MATH 107. MATH 109
or MATH 112

8. (Complete only if course restrictions are to be changed. Complete only those sections that pertain to the restrictions that are to be changed.) List Current and Proposed Course Restrictions. Course Restrictions limit the type of students who will be allowed to take the course.

b. Majors/Programs: (Check if course is restricted to those in specific majors/programs)

Current

Yes _____

No X _____

Proposed

Yes X _____

No _____

If yes, list the majors/programs

Course should be restricted to those who are
NOT declared Elementary Education Intent.
NOT in any Elementary Education program (MTHE.
INSC. LAG. SSG. RDNG. 3MIN).
and NOT in Special Ed Elementary (ELxx).

9. List all departmental programs for which this course is Required or a Restricted Elective.

Program Mathematics Major for Elementary Teaching Required _____ Restricted Elective X

Program Mathematics Minor for Elementary Teaching Required _____ Restricted Elective X

10. Is this course required by programs in other departments? Yes _____ No X

11. If yes, do the affected departments support this change? Yes _____ No _____
 If yes, attach letters of support. If no, attach letters from the affected department explaining the lack of support, if available.

12. Will the proposed revision increase/decrease credit hours in any program? Yes _____ No X
 If yes, list the programs and provide an explanation for the increase/decrease, along with a copy of the revised program that includes the new credit hour total.

C. Action of the Department/College

1. Department

Vote of department faculty: For _____ Against _____ Abstentions _____
 (Enter the number of votes cast in each category.)

Department Head Signature _____ Date _____

2. College

College Dean Signature _____ Date _____

Associate Vice-President for Undergraduate Studies Signature _____ Date _____