Originating unit requesting change _____ Math _____

Type of Change requested:

☐ Course number(s)	☐ Course prerequisite(s)	☐ Program title
☐ Course title	☐ Drop course(s)	☐ Program description
☐ Course description	☐ Drop program(s)	X Program requirements

Semester and year change(s) take effect: _____ Fall 2020 _____

Appropriate computer abbreviation if
course title is more than 30 spaces: _____ Mathematics BA _____

Briefly summarize the change requested:

Add new option for fulfilling associated requirements.

Current CIP Code (programs only): 27.0101
Does the change require a new or change in CIP code? ____Yes __X__No

If yes, what is the proposed CIP code? _____
*for reference, please visit: https://nces.ed.gov/ipeds/cipcode/resources.aspx?y=56

Catalog copy

Present catalog copy (paste-up from
catalog is acceptable.

Proposed change(s). (Include exact catalog
copy as desired. Underline changes)

Any two of the following:

- PHYS 20474 Physics I
- PHYS 20484 Physics II
- COSC 20203 Techniques in Programming
- ECON 40313 Econometrics

Any two of the following:

- PHYS 20474 Physics I
- PHYS 20484 Physics II
- COSC 20203 Techniques in Programming
- ECON 31223 Intermediate Microeconomics: A Mathematical Approach
- ECON 40313 Econometrics

1.   What is the justification for the change(s) requested?

        The Department of Economics is proposing a new course, ECON 31223 (Intermediate
        Microeconomics: A Mathematical Approach). This course fulfills the goals of the
        associated requirements for the undergraduate math degree, namely to expose students to
        the use of college-level mathematics in other disciplines. Adding this option therefore
        does not change program outcomes but does give students an additional course choice.

2.   If applicable, explain how the change(s) will affect the current program outcomes and
        assessment mechanisms.

        This change does not alter assessment mechanisms nor program outcomes.

3.   **Faculty Resources:** How will the unit provide faculty support for this change and any
        other impact this change may have on other current departmental listings.

        This change has no effect on faculty resources.

4.   **Educational Resources:** Will this change require additional resources not currently

available (e.g. space, equipment, library, other)?   ☐   YES

If yes, list additional resources needed.   X   NO

5.   If this change affects other units of the University, include a statement signed by the chairperson(s) of the affected unit(s).

6.   If cross-listed, provide evidence of approval by all curriculum committees appropriate to both the originating and cross-listed units.

Greg Friedman

_____
Approval signature of chairperson of originating unit

Revised 02/2020

UNDERGRADUATE COUNCIL
Request for Change(s)

Originating unit requesting change _____Math_____

Type of Change requested:

☐ Course number(s)   ☐ Course prerequisite(s)   ☐ Program title
☐ Course title   ☐ Drop course(s)   ☐ Program description
☐ Course description   ☐ Drop program(s)   X Program requirements

Semester and year change(s) take effect: _____Fall 2020_____

Appropriate computer abbreviation if
course title is more than 30 spaces: _____Mathematics BS_____

Briefly summarize the change requested:

Add new Economics course ECON 31223 Intermediate Microeconomics: A Mathematical
Approach as an option for fulfilling associated requirements for all Math BS majors AND allow
new math course MATH 40883 Predictive Modeling to satisfy one of the "programming
course" requirements for Track 2 of the Math BS.

Current CIP Code (programs only): 27.0101
Does the change require a new or change in CIP code? ____Yes __X__No

If yes, what is the proposed CIP code? _____
*for reference, please visit: https://nces.ed.gov/ipeds/cipcode/resources.aspx?y=56

Catalog copy

Present catalog copy (paste-up from
catalog is acceptable.

(Note: this catalog copy is based on changes
already approved by Undergraduate Council
this semester but not yet reflected in the
published catalog)

Math BS Track 2
The student must take an additional twelve hours of
mathematics courses, including one of MATH
40223 or MATH 40663 or MATH 40853, from
among the following:
• 	MATH 30803 Probability
• 	MATH 40103 Graph Theory
• 	MATH 40223 Applied Linear Algebra
• 	MATH 40853 Regression & Time Series
• 	MATH 40553 Modern Fourier Analysis
• 	MATH 40633 Game Theory

Proposed change(s). (Include exact catalog
copy as desired. Underline changes)

Math BS Track 2
The student must take an additional twelve hours
of mathematics courses, including one of MATH
40223, MATH 40663, MATH 40853, or MATH
40883, from among the following:
• 	MATH 30803 Probability
• 	MATH 40103 Graph Theory
• 	MATH 40223 Applied Linear Algebra
• 	MATH 40553 Modern Fourier Analysis
• 	MATH 40633 Game Theory
• 	MATH 40643 Dynamical Systems
• 	MATH 40663 Numerical Analysis
• 	MATH 40853 Regression & Time Series
• 	MATH 40883 Predictive Modeling
• 	MATH 50403 Complex Analysis
• 	MATH 50503 Real Analysis I
• 	MATH 50613 Partial Differential

- MATH 40643 Dynamical Systems
- MATH 40663 Numerical Analysis
- MATH 50403 Complex Analysis
- MATH 50503 Real Analysis I
- MATH 50613 Partial Differential Equations
- MATH 50623 Applied Mathematics I

Associated Requirements:

Any two of the following:

- PHYS 20474 Physics I
- PHYS 20484 Physics II
- COSC 20203 Techniques in Programming
- ECON 40313 Econometrics

Equations
- MATH 50623 Applied Mathematics I

Associated Requirements:

Any two of the following:

- PHYS 20474 Physics I
- PHYS 20484 Physics II
- COSC 20203 Techniques in Programming
- ECON 31223 Intermediate Microeconomics: A Mathematical Approach
- ECON 40313 Econometrics

1.   What is the justification for the change(s) requested?

         The Department of Economics is proposing a new course, ECON 31223 (Intermediate
         Microeconomics: A Mathematical Approach). This course fulfills the goals of the associated
         requirements for the undergraduate math degree, namely to expose students to the use of
         college-level mathematics in other disciplines. Adding this option therefore does not change
         program outcomes but does give students an additional course choice.

         AND

         Students pursuing the BS in Mathematics, Track 2, must currently take MATH 40223 Applied
         Linear Algebra, MATH 40663 Numerical Analysis, or MATH 40853 Regression & Time Series
         (note: the Math 40853 option was just approved by University Council this semester so does not
         appear in the published catalog yet). The reason for this requirement is for students to take an
         applied mathematics course that involves programming. The newly-proposed MATH 40883
         Predictive Modeling is also an applied mathematics course that requires programming and so is
         suitable to satisfy the intent of the current requirements. The proposed program change
         therefore provides students with an additional course option that remains consistent with the
         existing learning outcomes of the program.

2.   If applicable, explain how the change(s) will affect the current program outcomes and
         assessment mechanisms.

         This change does not alter assessment mechanisms nor program outcomes.

3.   **Faculty Resources:** How will the unit provide faculty support for this change and any
         other impact this change may have on other current departmental listings.

         This change has no effect on faculty resources.

4.   **Educational Resources:** Will this change require additional resources not currently
         available (e.g. space, equipment, library, other)?   ☐   YES
         If yes, list additional resources needed.   ☒   NO
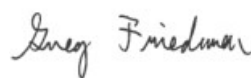
5.   If this change affects other units of the University, include a statement signed by the
         chairperson(s) of the affected unit(s).

6.   If cross-listed, provide evidence of approval by all curriculum committees appropriate
         to both the originating and cross-listed units.

                                                        Greg Friedman

                                                 _____
                                                 Approval signature of chairperson of originating unit

UNDERGRADUATE COUNCIL
Request for Change(s)

Originating unit requesting change   Math

Type of Change requested:

☐	Course number(s)	☐	Course prerequisite(s)	☐	Program title
☐	Course title	☐	Drop course(s)	☐	Program description
☐	Course description	☐	Drop program(s)	X	Program requirements

Semester and year change(s) take effect: Fall 2020

Appropriate computer abbreviation if
course title is more than 30 spaces: Mathematics BA with Actuarial Concentration

Briefly summarize the change requested:

Add new option for fulfilling associated requirements.

Current CIP Code (programs only): 27.0101
Does the change require a new or change in CIP code? ____Yes __X__No

If yes, what is the proposed CIP code? _____
*for reference, please visit: https://nces.ed.gov/ipeds/cipcode/resources.aspx?y=56

Catalog copy

Present catalog copy (paste-up from
catalog is acceptable.

Proposed change(s). (Include exact catalog
copy as desired. Underline changes)

Associated Requirements (30-32 hours):

ECON 10223	Introductory Microeconomics
ECON 10233	Introductory Macroeconomics
ECON 30223	Intermediate Microeconomics
ECON 30233	Intermediate Macroeconomics
ACCT 20353	Fundamentals of Accounting
ACCT 40163	Accounting for Decision Making &
FINA 30153	Financial Management

One of:

COSC 10403	Introduction to Programming
COSC 10503	Introduction to Programming for

Associated Requirements (27-32 hours):

ECON 10223	Introductory Microeconomics
ECON 10233	Introductory Macroeconomics
ECON 30223 OR ECON 31223	Intermediate Microeconomics / Intermediate Microeconomics: A Mathematical Approach
ECON 30233	Intermediate Macroeconomics
ACCT 20353	Fundamentals of Accounting
ACCT 40163	Accounting for Decision Making
FINA 30153	Financial Management

One of:

COSC 10603	Introduction to Python for Data An
ENGR 10573	Applied Programming Matlab

Any two of the following:

COSC 20203	Techniques in Programming
ECON 40313	Econometrics
PHYS 20474	Physics I with Laboratory: Mecha
PHYS 20484	Physics II with Laboratory: Electr

COSC 10403	Introduction to Programming
COSC 10503	Introduction to Programming for Engineering and
COSC 10603	Introduction to Python for Data Analytics
ENGR 10573	Applied Programming Matlab

Any two of the following:

COSC 20203	Techniques in Programming
ECON 31223	Intermediate Microeconomics: A Mathematical Approach
ECON 40313	Econometrics
PHYS 20474	Physics I with Laboratory: Mech
PHYS 20484	Physics II with Laboratory: Elec

Note that ECON 31223 can be applied to satisfy associated requirements from two of the above lists.

1.   What is the justification for the change(s) requested?

        The Department of Economics is proposing a new course, ECON 31223 (Intermediate
        Microeconomics: A Mathematical Approach). This course fulfills the goals of the
        associated requirements for the undergraduate math degree, namely to expose students to
        the use of college-level mathematics in other disciplines. It can also serve as a substitute
        for the traditional Intermediate Microeconomics course (ECON 30223) required for the
        actuarial concentration. Adding this option therefore does not change program outcomes
        but does give students an additional course choice.

2.   If applicable, explain how the change(s) will affect the current program outcomes and
        assessment mechanisms.

        This change does not alter assessment mechanisms nor program outcomes.

3.   **Faculty Resources:** How will the unit provide faculty support for this change and any
        other impact this change may have on other current departmental listings.

        This change has no effect on faculty resources.

4.   **Educational Resources:** Will this change require additional resources not currently
        available (e.g. space, equipment, library, other)?   ☐   YES
        If yes, list additional resources needed.   X   NO

5.   If this change affects other units of the University, include a statement signed by the
        chairperson(s) of the affected unit(s).

6.   If cross-listed, provide evidence of approval by all curriculum committees appropriate to
        both the originating and cross-listed units.

                                                        Greg Friedman

        _____
        Approval signature of chairperson of originating unit

UNDERGRADUATE COUNCIL
Request for Change(s)

Originating unit requesting change _____ Math _____

Type of Change requested:

☐ Course number(s)	☐ Course prerequisite(s)	☐ Program title
☐ Course title	☐ Drop course(s)	☐ Program description
☐ Course description	☐ Drop program(s)	X Program requirements

Semester and year change(s) take effect: _____ Fall 2020 _____

Appropriate computer abbreviation if
course title is more than 30 spaces: _____ Mathematics BS with Actuarial Concentration _____

Briefly summarize the change requested:

Add new Economics course ECON 31223 Intermediate Microeconomics: A Mathematical Approach as an option for fulfilling associated requirements for all Math BS-Actuarial majors AND allow new math course MATH 40883 Predictive Modeling to satisfy one of the "programming course" requirements for Track 2 of the Math BS-Actuarial.

Current CIP Code (programs only): 27.0101
Does the change require a new or change in CIP code? ____Yes __X__No

If yes, what is the proposed CIP code? _____
*for reference, please visit: https://nces.ed.gov/ipeds/cipcode/resources.aspx?y=56

Catalog copy

Present catalog copy (paste-up from catalog is acceptable.

(Note: this catalog copy is based on changes already approved by Undergraduate Council this semester but not yet reflected in the published catalog)

Math BS-Actuarial Track 2

- MATH 40223 Applied Linear Algebra

or

- MATH 40663 Numerical Analysis

or

- MATH 40853 Regression & Time Series

Proposed change(s). (Include exact catalog copy as desired. Underline changes)

Math BS-Actuarial Track 2

- MATH 40223 Applied Linear Algebra

or

- MATH 40663 Numerical Analysis

or

- MATH 40853 Regression & Time Series

or

- MATH 40883 Predictive Mopdeling

Associated Requirements (30-32 hours):

ECON 10223	Introductory Microeconomics
ECON 10233	Introductory Macroeconomics
ECON 30223	Intermediate Microeconomics
ECON 30233	Intermediate Macroeconomics
ACCT 20353	Fundamentals of Accounting
ACCT 40163	Accounting for Decision Making &
FINA 30153	Financial Management

One of:

COSC 10403	Introduction to Programming
COSC 10503	Introduction to Programming for
COSC 10603	Introduction to Python for Data A
ENGR 10573	Applied Programming Matlab

Any two of the following:

COSC 20203	Techniques in Programming
ECON 40313	Econometrics
PHYS 20474	Physics I with Laboratory: Mecha
PHYS 20484	Physics II with Laboratory: Electr

Associated Requirements (27-32 hours):

ECON 10223	Introductory Microeconomics
ECON 10233	Introductory Macroeconomics
ECON 30223 **OR** ECON 31223	Intermediate Microeconomics / Intermediate Microeconomics: A Mathematical Approach
ECON 30233	Intermediate Macroeconomics
ACCT 20353	Fundamentals of Accounting
ACCT 40163	Accounting for Decision Making
FINA 30153	Financial Management

One of:

COSC 10403	Introduction to Programming
COSC 10503	Introduction to Programming fo
COSC 10603	Introduction to Python for Data
ENGR 10573	Applied Programming Matlab

Any two of the following:

COSC 20203	Techniques in Programming
ECON 31223	Intermediate Microeconomics: A Mathematical Approach
ECON 40313	Econometrics
PHYS 20474	Physics I with Laboratory: Mecl
PHYS 20484	Physics II with Laboratory: Elec

Note that ECON 31223 can be applied to satisfy associated requirements from two of the above lists.

1. What is the justification for the change(s) requested?

The Department of Economics is proposing a new course, ECON 31223 (Intermediate Microeconomics: A Mathematical Approach). This course fulfills the goals of the associated requirements for the undergraduate math degree, namely to expose students to the use of college-level mathematics in other disciplines. It can also serve as a substitute for the traditional Intermediate Microeconomics course (ECON 30223) required for the actuarial concentration. Adding this option therefore does not change program outcomes but does give students an additional course choice.

AND

Students pursuing the BS in Mathematics, Track 2, must currently take MATH 40223 Applied Linear Algebra, MATH 40663 Numerical Analysis, or MATH 40853 Regression & Time Series (note: the Math 40853 option was just approved by Undergraduate Council this semester so does not appear in the published catalog yet). The reason for this requirement is for students to take an applied mathematics course that involves programming. The newly-proposed MATH 40883 Predictive Modeling is also an applied mathematics course that requires programming and so is suitable to satisfy the intent of the current requirements. The proposed program change therefore provides students with an additional course option that remains consistent with the existing learning outcomes of the program.

2. If applicable, explain how the change(s) will affect the current program outcomes and assessment mechanisms.

   This change does not alter assessment mechanisms nor program outcomes.

3. **Faculty Resources:** How will the unit provide faculty support for this change and any other impact this change may have on other current departmental listings.

   This change has no effect on faculty resources.

4. **Educational Resources:** Will this change require additional resources not currently available (e.g. space, equipment, library, other)? ☐ YES
   If yes, list additional resources needed. X NO

5. If this change affects other units of the University, include a statement signed by the chairperson(s) of the affected unit(s).

6. If cross-listed, provide evidence of approval by all curriculum committees appropriate to both the originating and cross-listed units.

   Greg Friedman

   _____
   Approval signature of chairperson of originating unit