content both within the Economics Department and in other departments. This emphasis is recommended for Economics majors wh
considering careers or graduate programs in theoretical and applied economics. Students completing the emphasis will receive a cer
from the Economics Department upon graduation. Upon graduation, the transcript will identify this emphasis as an "option" accomplis

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D. Elective Courses in Economics
   6 credit hours of 4000-level economics electives (9 hours if transferring six credits of micro and macro Principles courses).

II.   REQUIRED MATHEMATICS COURSES

Note: Many of the following courses listed below have prerequisites. Students are responsible for completing prerequisites before enrolling in these courses.

A. Required Calculus Courses

Take all
MATH 1300	Analytic Geometry and Calculus 1 (5 hrs.)	
MATH 2300	Analytic Geometry and Calculus 2 (5 hrs.)	
MATH 2400	Calculus 3 (4 hrs.) **OR** MATH 2130 Introduction to Linear Algebra (3 hrs)	

Note: APPM 1350 and APPM 1360 may substitute for MATH 1300 and 2300, respectively. APPM 2350 and APPM 2360 May substitute for MATH 2400 AND 2130, respectively.

B. Mathematics, Applied Mathematics and Computer Science Courses

At least three credit hours selected from courses listed below:
MATH 2400	Calculus 3 (4 hrs.)
MATH 2130	Intro. to Linear Algebra (3 hrs.)
MATH 3001	Analysis 1 (3 hrs.)
MATH 4001	Analysis 2 (3hrs)
MATH 4120	Introduction to Operations Research (3 hrs.)
MATH 3430	Ordinary Differential Equation (3 hrs.)
MATH 4510	Introduction to Probability Theory (3 hrs.)
MATH 4520	Introduction to Mathematical Statistics (3 hrs.)
MATH 4540	Introduction To Time Series (3 hrs.)
APPM 4570	Statistical Methods (3 hrs.)
APPM 4580	Statistical Methods for Data Analysis (3 hrs.)
CSCI 4502	Data Mining (3 hrs.)
CSCI 2820	Linear Algebra with Computer Science Applications

The following table lists approved substitutes for some courses listed above:

Course	Substitutes
MATH 2400 Calculus 3 (4 hrs.)	APPM 2350 Calculus 3 for engineers (4 hrs.)
MATH 2130 Intro. to Linear Algebra (3 hrs.)	APPM 2360 Intro. To Diff. Eq. with Linear Algebra (3 hrs.)
MATH 3001 Analysis 1 (3 hrs.)	APPM 4440 Undergraduate Applied Analysis 1 (3 hrs.)
MATH 4001 Analysis 2 (3hrs)	APPM 4450 Undergraduate Applied Analysis 2 (3 hrs.)
MATH 4120 Introduction to Operations Research (3 hrs.)	APPM 4120 Intro. to Operations Research (3hrs.)
MATH 4510 Introduction to Probability Theory (3 hrs.)	APPM 3570 Applied Probability (3 hrs.)
MATH 4520 Introduction to Mathematical Statistics (3 hrs.)	APPM 4520 Introduction to Mathematical Statistics (3 hrs.)
MATH 4540 Introduction To Time Series (3 hrs.)	APPM 4540 Introduction to Time Series (3hrs.)

• MATH 2400 and MATH 2130 (and their substitutes) may not be used to satisfy both requirements II.A and II.B
• Students considering pursuing graduate programs in theoretical and applied economics are encouraged to take MATH 2400, MATH 2130, MATH 3001 (pre-requisite: MATH 2001) and MATH 4001.