

Registrar's Office Initiated Equivalencies

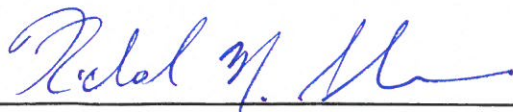
This process will establish guidelines to enter transfer course equivalencies by the Registrar's Office for approved lower division courses. These guidelines will be created by the CLAS department and approved by both the department head and the CLAS Dean's Office. The guidelines will lay out the criteria to determine what conditions a transfer course must meet to the CU Denver equivalent. These course equivalencies will be managed by the Registrar's Office and will apply to new incoming students.

The established guidelines will be given to the Registrar's Office. The courses meeting the conditions described within the listed guidelines will be given the appropriate transfer equivalencies without requiring additional departmental approval. These equivalencies will be done with the condition that the decisions made during this process are available for review by the CLAS department. Below is a set of general guidelines that all courses used in the Registrar's Office Initiated Equivalencies process will be subject to. Please see the attached pages following for specific guidelines for each course involved in the process.

Each course used in the Registrar's Office Initiated Equivalencies process must met the following criteria:

- Has the same or similar department pre-fix
- Has a similar course title
- Taught at the lower division level
- Similar course content to CU Denver course (as determined by course description)
- Institution must be appropriately accredited
- Must be at least 2.7 semester credit hours (can be more).
- Specific additional criteria as listed on subsequent pages

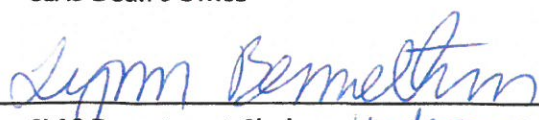
| CU Denver Course | Course Title |
|------------------|------------------------------|
| MATH 1999AE | Generic Math course |
| MATH 1080 | Calculus for Social Sciences |
| MATH 1110 | College Algebra |
| MATH 1120 | College Trigonometry |
| MATH 1130 | Precalculus |
| MATH 1401 | Calculus I |
| MATH 2411 | Calculus II |
| MATH 2421 | Calculus III |
| MATH 2830 | Introductory Statistics |
| | |



CLAS Dean's Office

12/11/15

Date



CLAS Department Chair, Undergraduate Committee

Dec 11, 2015

Date

MATH 1999 – general math credit at lower division

Registrar's Office Initiated Equivalency Guidelines

CU Denver Description:

None

Specific guidelines to be met:

Must be at least 2.7 semester credit hours (can be more). Must be college-level as evidenced by either having a prerequisite requirement of intermediate algebra or equivalent or meeting the transferring institution's CORE University mathematics requirement or General Education math requirement. Not automatically articulated if it is a prerequisite for another 100/1000 level math course such as college algebra, math for liberal arts, or quantitative thinking.

Note:

A popular course sometimes titled: "Finite Math" should be transferred in and articulated as MATH 1999AE. To meet the slam dunk requirement the following specific guidelines must be met:

Must include either:

- I. At least four of the following seven topics: (1) Mathematical Model Building (Math Modeling or Modeling or Functions), (2) Matrix Algebra (Matrices or Systems of Linear Equations or Linear Systems), (3) Linear Programming (Simplex Method) (4) Math of Finance (5) Probability (6) Statistics (7) Set Theory (Sets).
- II. Three of the above seven topics and at least one of the following five topics: (1) Discrete Math (2) Combinatorics (Counting Techniques) (3) Logic (4) Markov Chains (Markov Processes) (5) Game Theory. Usually includes Business and Social Science applications. Must have a prerequisite requirement (e.g. test or intermediate algebra).

MATH 1080 Calculus for Social Sciences and Business

Registrar's Office Initiated Equivalency Guidelines

CU Denver Description:

A one-semester course in single-variable calculus. Topics include limits, derivatives, differentiation rules, integration and integration rules. Emphasis is on applications to business and social sciences. Note: No knowledge of trigonometry is required. Those planning to take more than one semester of calculus should take MATH 1401 instead of MATH 1080. MATH 1070 or MATH 1110 with a C- or higher is required for students to register for this course. No co-credit with MATH 1401.

Specific guidelines to be met:

Must be at least 2.7 semester credit hours (can be more). Must have college algebra or equivalent as a prerequisite. Must include derivatives (or differentiation) and integration (or integral) in the course description. Should not have trigonometry as a prerequisite (MATH 1120 or equivalent). If it does have trigonometry as a prerequisite, then it may transfer in as MATH 1401. This course should not be a prerequisite for Calculus 2.

Include key terms or phrases, alternate titles, etc.

Business Calculus

Calculus for Business/Management Sciences/ Economics

Concepts/Survey of Calculus

Elementary Calculus and Its Applications

MATH 1110 College Algebra

Registrar's Office Initiated Equivalency Guidelines

CU Denver Description:

Topics in algebra designed for students who intend to take the calculus sequence. Functions, domains, ranges, graphs, data scatter plots and curve fitting, solving equations and systems of equations, polynomial, rational, exponential and logarithmic functions and other topics. Applications are emphasized. Note: Students may not receive credit for this course if they have already received credit for MATH 1070 or MATH 1130. Note: 24 on ACT-Math, 560 on SAT-Math or above average performance in intermediate algebra, algebraic literacy or integrated math are strongly recommended as preparation for this course.

Specific guidelines to be met:

Must be at least 2.7 semester credit hours (can be more).

Must cover exponential and logarithmic functions (natural logarithms). Must have a prerequisite requirement (e.g. test or intermediate algebra). Not automatically articulated if says "applied" or "applications" in title, or if it is a prerequisite for Precalculus. A good indicator is that this course is a pre-requisite for Trigonometry and the trigonometry course is a prerequisite for Calculus.

Include key terms or phrases, alternate titles, etc.

Precalculus Algebra

Business Algebra

Algebra for Social Sciences

If the course has algebra in the title, please look at course description

MATH 1120 College Trigonometry

Registrar's Office Initiated Equivalency Guidelines

CU Denver Description:

Topics in trigonometry, analytic geometry, and elementary functions designed for students who intend to take the calculus sequence. Angles and trigonometry functions of acute angles, analytic trigonometry, fundamental trigonometric functions and identities including hyperbolic trigonometry, parametric equations, and polar coordinate system. Graphic calculators and/or computer algebra systems are used extensively. Applications are emphasized. Note: This course assumes that students have mathematical knowledge equivalent to MATH 1110 or MATH 1070. Students with a grade of B- or better in MATH 1110 or MATH 1070 pass the course at a much higher rate. No co-credit with MATH 1130.

Specific guidelines to be met:

Must be at least 2.7 semester credit hours (can be more).

Must have a prerequisite requirement (test or college algebra). Not automatically articulated if says "applied" or "applications" in title. Must meet the prerequisite requirement for the institution's Calculus I.

Include key terms or phrases, alternate titles, etc.

Precalculus II

Analytic/Plane/Numerical Trigonometry

Algebra and Trigonometry

MATH 1130 Precalculus Math

Registrar's Office Initiated Equivalency Guidelines

CU Denver Description:

Condensed treatment of the topics in MATH 1110 and 1120. Note: This course assumes that students have mathematical knowledge equivalent to a grade of C- or better in College Algebra and Trigonometry. No co-credit with MATH 1070, 1110 or 1120.

Specific guidelines to be met:

Must be at least 2.7 semester credit hours (can be more).

Must have a prerequisite requirement (test or intermediate algebra, Intermediate algebra (may also be called Survey of Algebra), 2 years of High School Algebra). Must include "algebra" and "trigonometry" in the course description (if not, it may be equivalent to MATH 1110 or MATH 1120). Not automatically articulated if says "applied" or "applications" in title. Must meet the prerequisite requirement for the institution's Calculus I.

Include key terms or phrases, alternate titles, etc.

Precalculus Algebra

MATH 1401- Calculus I

Registrar's Office Initiated Equivalency Guidelines

CU Denver Description:

First course of a three-semester sequence (MATH 1401, 2411, 2421) in calculus. Topics covered include limits, derivatives, applications of derivatives, and the definite integral. Note: No co-credit with MATH 1080. Note: : To be able to register for this course, students must first be entered into the MATH 1401 Student Group. To be eligible, students must demonstrate that they have mathematical knowledge equivalent to MATH 1120 or MATH 1130. Students can demonstrate this proficiency 1) by having an SAT score of 620 or an ACT score of 27, taken within the last three years, or 2) by having completed and transferred in a course that is the exact equivalent of MATH 1401 at a different institution, or 3) by earning a score of 70% or higher on the prerequisite exam administered through the MERC lab. Some preparation is required before this prerequisite exam can be taken; contact the MERC lab or the Mathematics department for more information.

Specific guidelines to be met:

Must be at least 2.7 semester credit hours (can be more).

Must cover limits. Must have a prerequisite requirement similar to ours (Precalculus or Trigonometry or SAT/ACT scores or placement exam). Not automatically articulated if says "technical" or "applied" or "applications" in title.

Include key terms or phrases, alternate titles, etc.

Analytical Geometry and Calculus I

Single Variable Calculus

MATH 2411- Calculus II

Registrar's Office Initiated Equivalency Guidelines

CU Denver Description:

The second of a three-semester sequence (MATH 1401, 2411, 2421) in calculus. Topics covered include exponential, logarithmic, and trigonometric functions, techniques of integration, indeterminate forms, improper integrals and infinite series. Prereq: C- or better in MATH 1401. Note: Students with a grade of B- or better in MATH 1401 pass this course at a much higher rate.

Specific guidelines to be met:

Must be at least 2.7 semester credit hours (can be more).

Must cover integrals of trigonometric functions and sequences/series. Must have a prerequisite requirement (test or Calculus I). Not automatically articulated if says "technical" or "applied" or "applications" in title.

Include key terms or phrases, alternate titles, etc.

Analytical Geometry and Calculus II

MATH 2421- Calculus III

Registrar's Office Initiated Equivalency Guidelines

CU Denver Description:

The third of a three-semester sequence in Calculus (MATH 1401, 2411 and 2421). Topics include vectors, vector-valued functions, partial differentiation, differentiation, multiple integration, and vector calculus. Prereq: C- or better in MATH 2411. Note: Students with a grade of B- or better in MATH 2411 pass this course at a much higher rate.

Specific guidelines to be met:

Must be at least 2.7 semester credit hours (can be more).

Must cover "partial differentiation", "multiple integration", and one of the following: "vector calculus" "line integrals" "divergence theorem". Must have a prerequisite requirement (test or Calculus I & Calculus II). Not automatically articulated if says "technical" or "applied" or "applications" in title.

Include key terms or phrases, alternate titles, etc.

Multivariable/Multivariate Calculus

Analytical Geometry and Calculus III

MATH 2830 Introductory Statistics

Registrar's Office Initiated Equivalency Guidelines

CU Denver Description:

Basic statistical concepts, summarizing data, probability concepts, distributions, confidence intervals, hypothesis testing.

Note: This course assumes that students have knowledge equivalent to three years of high school mathematics (two years of algebra), intermediate algebra, or Algebraic Literacy at a Colorado Community College at the start of class.

Students who have a grade of B- or better in one of these courses pass at a much higher rate.

Specific guidelines to be met:

Must be at least 2.7 semester credit hours (can be more).

The course must be taught in a mathematics or statistics department at the college level (usually numbered 100 or above, not a prerequisite for another 100-level statistics or math course). Must cover descriptive statistics ("graphical representations of data", "measures of center and spread"), basic probability ("probability"), probability/sampling distributions ("sampling distributions"), and two-sample hypothesis testing ("hypothesis testing" is not sufficient).

Include key terms or phrases, alternate titles, etc.

Introduction to Probability and Statistics/Intro to Statistical Methods

Elements of Statistics

Elementary Statistics

Statistics

General Statistics

Principles of Statistics