

# 1955 Colorado College catalog

## degree requirements

### Degrees

#### Bachelor of Arts Degree

Candidates for the Bachelor of Arts degree must fulfill the following requirements:

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- (1) Complete 128 semester hours of which number
  - (a) 24 to 48 semester hours must be in a major or one subject. Note: In music or art the maximum number of hours in a major may be increased on the basis of a division between practical and theoretical courses.
  - (b) Not more than 88 semester hours may be taken in the division in which the major work is done.
  - (c) A minimum of 40 semester hours must be completed outside the division in which the major work is done.
- (2) Satisfactorily pass a comprehensive examination.
- (3) Have twice as many quality points as semester hours (applies only to work taken since September 1, 1951.)

**Eight Hour Credit Bracket.** The attention of all students is called to the fact that the total number of credit hours from certain courses which can be counted toward a degree is limited to eight. The courses in this category are: Choir, band, typing, shorthand and practical radio. (Radio 334, 335 and 336).

**Bachelor of Arts Degree** (with major in Basic Engineering) see page 57.

**Bachelor of Arts Degree** (in Botany, for Forestry program) see page 61.

#### A.B. Degree in Business Administration and Banking

The Department of Economics, Business Administration and Banking offers a program of study leading to the degree of Bachelor of Arts in Business Administration and Banking. The requirements for this degree are comparable to those required for the Bachelor of Arts degree.

#### Bachelor's Degree with Honors

The Bachelor's degree with honors may be conferred upon those students who receive the recommendation of the department in which the major part of their work has been done and of the committee on instruction. The degree **summa cum laude** is conferred only by a special vote of the faculty after individual consideration of each case.

#### Bachelor of Science Degree—(4-Year Program)

Candidates for the Bachelor of Science degree (4-year program) with major in Botany, Chemistry, Geology, Physics, Zoology, or Mathematics must fulfill the following requirements:

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- (1) Complete 128 semester hours of which number
  - (a) 44 semester hours must be earned in the major subject.
  - (b) 88 semester hours must be earned in the Division of Natural Sciences.
  - (c) 40 semester hours must be completed outside the Division of Natural Sciences.
- (2) Satisfactorily pass a comprehensive examination including the Graduate Record Examination.

#### Bachelor of Science Degree in Medical Technology

Candidates are referred to the detailed description on page 54. 5

#### Bachelor of Science Degree—(5-Year Program)

Candidates for the Bachelor of Science degree with a major in Civil Engineering, Geological Engineering or Engineering Physics must complete the requirements as outlined in each of these fields of study. See pages 58 to 60.

Candidates for this degree must satisfactorily pass a comprehensive examination including the Graduate Record Examination.



# 1955 Colorado College Catalog - Math section

- 363 HISTORY OF AMERICAN POLITICAL PARTIES  
Attention will be given to the dominant political parties from 1789 to the present, their outstanding leaders, basic ideas, popular support, and presidential campaigns.  
—HOCHMAN
- 409 and 410 READINGS IN HISTORY  
Directed individual reading for seniors and graduates. 3 hours. —CARTER
- 412 HISTORIOGRAPHY  
A study of some of the great historians, and their writings, of the historical method, of the relation of the various fields of history to one another, and of the philosophy of history. Chiefly for seniors preparing for the comprehensive examination. 3 hours.  
—MALONE

## ITALIAN

- 101 and 102 ELEMENTARY ITALIAN  
Grammar, reading, and oral practice. Recommended for students of music and voice. 3 hours each semester. (Two-semester course.) —CARTER
- 201 and 202 INTERMEDIATE ITALIAN  
Modern Italian prose the first semester. During the second semester, selections from Dante. Prerequisite: Italian 101 and 102. 3 hours each semester. (Two-semester course.) —LATIMER

## MATHEMATICS

- C 105 and 106 ELEMENTARY MATHEMATICAL ANALYSIS  
A unified treatment of Algebra, Trigonometry and Analytic Geometry designed to prepare the student for an introductory course in Calculus. Prerequisite: one unit High School Algebra and one unit Plane Geometry. 4 hours each semester.  
—HANSMAN, LEECH, RAWLES
- 112 MATHEMATICAL THEORY OF INVESTMENTS  
Simple and compound interest, annuities, amortization, valuation of bonds, sinking funds, depreciation. Prerequisite: Mathematics 103 or consent of instructor. 3 hours.  
—HANSMAN, LEECH
- 115 and 116 BASIC CONCEPTS OF MATHEMATICS  
Mathematics logic, the meaning of proof; mathematical systems in general; the construction of a particular mathematical system; the role of deductive reasoning in the modern world. 3 hours each semester. —LEECH
- 124 THEORY OF EQUATIONS  
Simultaneous linear equations in two and three variables, binomial equations, elementary theorems on the roots of equations, transformations of an equation, solution of the cubic quartic, separation of the roots. Descartes' rule of signs, Budan's theorem, Sturm's theorem, solution of numerical equations, Horner's method, Newton's method, Graaffe's method, determinants, eliminants, ruler and compass construction. Prerequisite: Mathematics 104 and 122. 3 hours. —HANSMAN
- 203 and 204 CALCULUS  
Elementary functions; derivatives and integrals with their application to problems of maxima and minima, rates, velocities, accelerations, areas, volumes, centroids, moments of inertia, work; partial differentiation, iterated integrals. Year course. 4 hours each semester. —HANSMAN, LEECH, RAWLES
- 207 and 208 ELEMENTARY STATISTICS  
First semester: charts and graphs, frequency distribution, index numbers, analysis of time series, correlation. Prerequisite: Mathematics 103 or permission of the instructor.  
Second semester: sampling theory, analysis of variance. Prerequisite: Mathematics 207. 3 hours each semester. —HANSMAN
- 301 and 302 ANALYTICAL MECHANICS  
First semester: forces, scalar and vector quantities; moments and couples; graphical and analytic conditions for equilibrium; force and string polygons; equilibrium of forces applied to simple structures and machines; free body sketches, stress diagrams, moments of sections; loaded cables, equilibrium of various force systems; coplanar and non-coplanar forces; principles of friction applied to wedges, screws, and bearings; centroids of areas, volumes, and masses. Second semester: motion of a particle, kinematics of a particle, work and energy, impact, dynamics of rigid bodies, applications. Prerequisite: Mathematics 204 or permission of instructor. Offered 1956-57 and alternate years. 3 hours each semester. —LEECH



# 1955 Colorado College

## 315 and 316 ADVANCED CALCULUS

Partial differentiation, multiple integrals, Taylor's theorem, elliptic integrals, line integrals, Fourier's series, calculus of variations, application. Prerequisite: Mathematics 203 and 204. Offered 1955-56 and alternate years. 3 hours each semester.—RAWLES

## 401 THE TEACHING OF MATHEMATICS

The history of mathematics and the aims and methods of teaching mathematics in the secondary schools. Prerequisite: high school algebra and geometry and senior standing. Offered 1955-56 and alternate years. 3 hours. —HANSMAN, LEECH

## 402 READINGS IN MATHEMATICS

Readings, discussions and reports on selected topics in college mathematics. Prerequisite: senior standing and concentration in mathematics. 3 hours. —DEPARTMENT

## 405 and 406 MODERN ALGEBRA

The real number system, determinants and matrices, transformations, integral domains, rings, fields, vector spaces, groups, polynomials and their properties. Offered 1956-1957 and alternate years. 3 hours each semester. —LEECH

## MUSIC

(NOTE: All music courses are by permission of instructor.)

### *Theoretical Courses*

## 101 and 102 MUSIC FOR THE LAYMAN

A course designed to enable the layman to listen to music intelligently, emphasizing the basic elements of music, including properties of tones, musical instruments, rhythm, melody, harmony, texture, and fundamental musical forms. Various types of music from various countries and historical periods are used as illustrations. Works from the standard concert repertory are also presented and discussed, with some assigned outside listening. 3 hours each semester. —GAMER, HERMAN

## 105 FUNDAMENTALS OF MUSIC

A one-semester course stressing the elements of musical notation and basic theory. This course is primarily designed for students planning to major in elementary education and for those music students who are found deficient in this area when they take their placement examination. However, no credit will be given for this course toward a major in music. Non-music majors will receive three hours credit. —HERMAN

## 207 and 208 EAR TRAINING

Training in relative pitch. Melodic, harmonic, and rhythmic diction. Sight-singing. Keyboard harmony. To be taken concurrently with Music 213-214. 2 hours each semester. —SEAY

## 213 and 214 SURVEY OF TRADITIONAL THEORY

A two-semester course in the common practices of various representative musical periods. The first semester will cover the harmonic practices of the Classic and Romantic periods. The second semester will cover the harmonic-contrapuntal practice of the Baroque. To be taken concurrently with Music 207-208. (Class 2, lab. 1.) 2 hours each semester. —SEAY

## 239 and 240 GENERAL LITERATURE OF MUSIC

A course designed to acquaint the student with the important works of the standard concert repertory. In addition to the class periods devoted to lectures and listening approximately three hours of assigned listening will be expected weekly. 2 hours each semester. —HERMAN

## 301 and 302 ORCHESTRATION

Study of orchestral and band instruments with regard to their individual properties. Analysis of representative master scores. Instrumentation for various ensembles, especially those found in high schools and colleges. Prerequisite: Music 306 and 314, or equivalent. 2 hours each semester. —HERMAN

## 305 and 306 ANALYSIS OF MUSICAL MATERIALS

A study of formal principles from folk-song and Gregorian chant to the present day. Analysis of contrapuntal and homophonic forms. Harmonic and melodic analysis of all styles and periods. Prerequisite: Music 208 and 214, and concurrent registration in Music 313 and 314. 2 hours each semester. —GAMER

## MUSIC EDUCATION IN THE ELEMENTARY GRADES

Survey of basic principles in music education. Study of aims, activities, methods and materials in music teaching in the first six grades. Regular observation included. Prerequisite: Music 105 or equivalent. 4 hours. —JUHAS