

## COLLEGE ENTRY LEVEL EXPECTATIONS

The faculty of Colorado's public colleges and universities believe that college success significantly depends on a student's college preparation. During the past two years, college faculties have discussed what they expect a first-year college student to know and be able to do. The expectations come from actual freshmen class assignments and represent the knowledge and skills a freshman needs to succeed in college.

The college entry level expectations apply across the curriculum to all freshmen who are recent high school graduates. They are not directed to students enrolling in a specific course or a specific major. The competency categories parallel college general education categories.

College faculty expect all new freshmen students to be proficient in:

- Communication (writing, reading, speaking)
- Mathematics
- Humanities (literature, fine arts, foreign language)
- Social Science (civics, economics, geography, history)
- Science (biology, chemistry, physics, earth and space science)

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## **COMMUNICATION** (Writing, reading, speaking and listening)

### **READING**

You will be expected to:

- (1) Read and understand a variety of reading materials (Reading & Writing Content Standard 1)

You will need the following reading skills to complete freshman assignments:

- Vary your reading speed and method (survey, skim, review, question, and master) according to the type of material and your purpose.
- Read at a 12th grade level. A typical freshman reading assignment may be to read two or three short stories or a play, such as "Fences" or "Oedipus" in one week. A typical freshman math assignment may be to read a chapter (25 pages) for the next class discussion.
- Recognize the main ideas and separate them from other interesting points in an article.
- Use contextual clues or common root words to infer what unfamiliar words mean.

- (2) Apply thinking skills to reading (Reading & Writing Content Standard 4).

- Recognize the different purposes and types of writing (e.g., descriptive, persuasive, imaginative, biographical).
- Recognize the historical context of a work of art or literature.
- Interpret material by connecting your own experiences to what you read.
- Determine if an author's argument is valid or flawed.

- (3) Develop research skills to locate information in various sources (Reading & Writing Content Standard 6). You will be asked to prepare a research plan, list the potential information sources, collect the information, and decide what is important for your purposes using:

- online or library catalogs to find information about a topic.
- computer databases or print indexes to find information in magazines.
- reference books, encyclopedias, back issues of newspapers or magazines, compact disks, and videos.

### **WRITING COMPETENCIES**

You will be expected to:

- (1) Vary your writing style for different readers (Reading & Writing Content Standard 2).

- Understand the writing process: formulating ideas, selecting and developing an idea, refining an idea, evaluating the written product, correcting errors and rewriting.
- Generate and recognize a thesis statement.

- Organize your ideas into logical paragraphs and papers.
  - Support an idea or opinion with relevant and specific material.
  - Clarify your writing by using simpler language or creating transitions between paragraphs.
  - Submit papers prepared on a computer or word processor.
- (2) Vary your writing style for different purposes (Reading & Writing Content Standard 2). You should have experience writing all these types of assignments before entering college:
- A paragraph that describes your observations and uses appropriate technical terms.
  - A two-page paper (approximately 500 words) that expresses one main point. College faculties expect freshman students to use a single point of view in a paper. A four-year college graduate should be able to examine a topic from several points of view.
  - A five-page research paper (approximately 1,000 words) with footnotes and bibliography listing books, periodicals, and electronic sources.
  - A short response that supports or opposes a position on a real world issue.
  - A poem or short story.
  - Use writing to analyze, argue, and explore new ideas.
  - Use imagination, rhetoric, and descriptive words.
- (3) Write papers that are “virtually error-free” and understandable. Virtually error-free means that the grammar, mechanics, and spelling are correct (Reading & Writing Content Standard 3).
- (4) Understand the various forms of plagiarism and the acceptable ways for using other people’s words in your writing.

### **SPEAKING AND LISTENING**

- (1) You will be expected to discuss subjects informally and formally in most college classes (Reading & Writing Content Standard 2).

In one-on-one situations, you will be expected to:

- Initiate and participate in conversations with faculty or other students.
- Ask focused questions to obtain information.
- Answer a question asked logically and concisely.

In small groups, you will be expected to:

- Participate in discussions by adding ideas, supplying facts, or asking questions.
- Explain the reasoning used to solve a problem.

- Express and support your personal position on an issue even if it differs from other people's beliefs.

When making a formal presentation, you will be expected:

- Write a three to five-minute speech, which states a main idea, uses specific information to support the idea, and conclude the speech by summarizing the main points.
- Understand the difference between written and oral presentations and the effects of that difference on form.
- Present a short speech to a group of 20 people without a microphone.
- Use different presentation styles and vocabulary that fit the topic, audience, and occasion.
- Summarize your position on a topic in three to five sentences.

You will need the following skills to communicate effectively in freshmen classes:

- Organize information so that the audience is interested and understands what you have to say.
- Use charts, photos, or diagrams to emphasize a main point in a speech.
- Use language that is clear, vivid, and suitable for the occasion and the audience.
- Use language that is sensitive to gender and ethnic differences.
- Use good grammar and pronounce words correctly.
- Vary speed, voice pitch, and intensity level when talking.
- Follow written and spoken instructions.
- Identify the main points in lectures and discussions.
- Take accurate notes that outline important points.
- Summarize or interpret another person's point of view.

## **MATHEMATICS**

A college student is expected to solve problems in a variety of classes and explain the reasoning used to solve the problem. You will be expected to:

- (1) Use numbers and sets of numbers to solve problems or explain ideas (Mathematics Content Standard 1).
  - Represent and use numbers in a variety of forms (e.g., fractions, decimals, percents, exponents, absolute values, and scientific notation).
  - Convert a value from one form to another (e.g., reduce the dose of a medication from

ounces to metric or convert architectural dimensions from fractions to decimals) .

- Use common sense to judge if a solution is reasonable when solving problems involving real numbers.
- (2) Use algebraic methods to describe and model patterns and functions involving numbers, shapes, data, and graphs (Mathematics Content Standard 2).
- Explain algebraic equations and inequalities.
  - Set up and solve linear equations with two unknowns.
  - Understand the difference between a function and an equation.
  - Perform operations involving functions.
  - Model real-world events (e.g., distance-time relationships, compound interest) using functions, equations, inequalities, and graphs.
  - Graph equations and understand that a graph represents all the values that satisfy an equation and two equations are satisfied at the same time if the graphs intersect.
- (3) Use data collection and analysis, statistics, and probability to set up and solve problems (Mathematics Content Standard 3).
- Calculate averages, medians, and mode from data set of 20 items.
  - Calculate simple probabilities for coin tossing, jury verdicts, or game situations.
  - Construct different combinations from a data set. For example, how many different combinations exist if a basketball team has 10 players?
  - Use a personal computer to enter and analyze data.
- (4) Use geometric concepts, properties, and relationships to problems (Mathematics Content Standard 4).
- Use a variety of tools to construct two and three-dimensional shapes.
  - Identify simple differences between geometric properties of planes and spheres.
  - Understands and uses the properties of symmetry, similarity, and congruence.
  - Constructs multiple geometric transformations using rotation, reflection, or translation.
  - Calculate the surface areas and volumes of regular shapes (e.g., triangles, rectangles, parallelograms) and irregular shapes.
- (5) Use a variety of tools to measure quantities (Mathematics Content Standard 5).
- Read and interpret scales used on graphs and maps.
  - Use formulas to solve measurement problems.

- Use rates of change to calculate unknown quantities (e.g., use a specified growth rate to calculate Colorado's projected population levels).
  - Apply trigonometric ratios to solve problems (e.g., calculate distances and angles that are hard to measure directly).
- (6) Understand the different techniques and mathematical operations for calculating solutions (Mathematics Content Standard 6). You will need the following skills to complete freshman assignments in a variety of courses:
- Perform basic arithmetic operations (i.e., addition, subtraction, multiplication, division).
  - Select and use appropriate arithmetic operations for solving multi-step problems.
  - Follow mathematical rules (e.g., rules of equations, order of operations, conversion from one form to another).
  - Use the appropriate method depending on the problem and time (e.g., mental math, estimating, pencil and paper, graphing calculator, or computer).

#### **LITERATURE, FINE ARTS, and FOREIGN LANGUAGE**

You will be expected to:

- (1) Know what defines literary quality, including characterization, style, theme, and diction (Reading & Writing Content Standard 1, 2).
- (2) Know what defines artistic or musical quality (Visual Arts 2 & Music 4).
- (3) Know the characteristics that tend to define each stylistic era such as Renaissance, Classical, Romantic (Visual Arts 4).
- (4) Identify similarities in an author's or artist's style to works by other authors or artists.
- (5) Relate ideas in literature to the present time (e.g., George Orwell's *1984* view of technology and the television series *X-Files* (Reading & Writing Content Standard 6).
- (6) Describe how images and themes reinforce the meaning in a novel, poem, play, painting, or musical composition (Visual Arts 2)
- (7) Be able to analyze the characteristics of a creative work using the terminology appropriate to the creative work (Visual Arts 5).
- (8) Relate literature to the historical and political events of the time (Reading & Writing Content Standard 4).
- (9) Relate visual and performing arts to the literature and history of the time, and if relevant, to the personal history of the artist (Visual Arts 4 & Music 5).
- (10) You should have the following experiences before you enter college:
  - Read a variety of American fiction and poetry from early period to contemporary works such

as James Fenimore Cooper, Mark Twain, Willa Cather, e.e. cummings, T.S. Eliot (Reading & Writing Content Standard 6).

- Read work written by major authors and poets of other countries such as Shakespeare, Leo Tolstoy (Reading & Writing Content Standard 6).
- Create a work of art such as poem, short story, painting, sculpture, musical composition (Visual Arts 1).
- Participate in a dance, choral group, band, orchestra, play performance (Music 1, 2, 3).

## **FOREIGN LANGUAGE**

Many undergraduate programs require the study of a foreign language for college graduation.

After completing two years of foreign language in a high school, you will be expected to:

- (1) Understand and respond to oral directions given in the language (Foreign Language Content Standard 1).
- (2) Orally express personal ideas using idiomatic expressions and understandable pronunciation (Foreign Language Content Standard 2).
- (3) Ask and answer questions in culturally appropriate ways using vocabulary suitable to the subject and the situation (Foreign Language Content Standard 2).
- (4) Understand simple reading assignments without using a dictionary (Foreign Language Content Standard 3).
- (5) Write simple compositions based on everyday situations (Foreign Language Content Standard 4).
  - Use the correct forms of regular verbs and common irregular verbs to describe actions and situations.
  - Use appropriate forms of nouns and adjectives.
  - Demonstrate a working vocabulary so that you can write about home, family, school, weather, and other everyday topics.
- (6) Develop an understanding of the cultures of the peoples who speak the language.
  - Demonstrate an awareness of appropriate cultural behaviors in everyday situations.
  - Identify geographical regions where the language is spoken.

## **SOCIAL SCIENCES**

- (1) You will be expected to draw conclusions and interpret geographic information from different kinds of maps and geographic tools (Geography Content Standard 1). You will need the following map skills to complete freshmen assignments in a variety of courses:
  - Draw generally accurate two-dimensional maps.
  - Use atlases to answer basic questions relating to climate, natural vegetation, and growing seasons.

- Infer the natural processes that shaped the Earth's surface patterns from physical features shown on a map.
  - Use maps, globes, or other geographic tools to locate places in three to five minutes with a small number of geographic reference points (e.g., north of Italy, west of a mountain range).
- (2) Recognize the economic and political importance of places such as the Suez Canal (Geography Content Standard 2).
- Demonstrate a basic understanding of how political unrest can affect economics .
- (3) Understand the major processes of human geography, such as migration, land use, and water (Geography Content Standard 3).
- (4) Know the basic concepts of economics, including scarcity, choice, supply and demand, opportunity costs, the function of money, and the role of government (Economics Content Standard).
- (5) Understand the way in which key concepts such as power, liberty, equality, and community have been used throughout history (Civics Content Standard 2).
- (6) Trace the development of the concept of equality in the United States. This includes knowing people and events that were significant in the development process (Civics Content Standard 2).
- (7) Describe the foundations, processes, and basic principles of various forms of government (Civics Content Standard 3).
- (8) Know the basic concepts contained in the Declaration of Independence, the Constitution, the Bill of Rights, and the Gettysburg Address (Civics Content Standard 4).
- (9) Discuss the United States' current political position on economic, defense, and foreign trade and its political relationship to other nations (Civics Content Standard 4 & History Content Standard 4).
- (10) Track the candidates and issues during a local, state or national election (Civics Content Standard 5).
- (11) Know the major events of U.S., European, and World history (History Content Standard 1).
- Know the key people and key turning points of U.S. history.
  - Construct a time line of significant events for a particular country or era (e.g., Renaissance).
- (12) Understand how evidence is evaluated and some of the complexities historians face when evaluating evidence (History Content Standard 2).
- (13) Describe the social organization of different societies, including the different roles, power, privilege, and tradition (History Content Standard 3).
- (14) Understand how social, economic, and political events in one area of the world can affect events and conditions in different regions of the world (Geography Content Standard 4 & History Content Standard 4).
- (15) Trace the major developments such as industrialization, civil rights, and democratic government (History Content Standard 5).

- (16) Compare and contrast different forms of government to the United States constitutional system (History Content Standard 5).
- (17) Discuss how a current world event, like the Bosnian conflict, may change government, the surrounding countries, or the lives and economy of the people living in the country (History Content Standard 6)

## SCIENCES

- (1) You will be expected to have experience designing science experiments, proposing hypotheses, and evaluating the experiment's results (Science Content Standard 1).
- Demonstrate an understanding of the relationships between observations and models.
  - Have direct, hands-on laboratory experience in high school: three years of laboratory based science that includes biology, chemistry, and physics.
  - Use scientific thinking to analyze results or present findings.
- (2) You will be expected to use knowledge of chemistry and physics (Science Content Standard 2) in a variety of freshman classes, including:
- Properties and structure of matter.
  - Forms of energy and ways to identify, measure, and calculate energy transfer and matter transformation.
  - Conservation of matter and energy.
  - Chemical changes (e.g., combustion, simple chemical reactions).
  - Concepts of physical interactions (e.g., velocity, force, power).
  - Operating principles of basic machines.
  - How to use symbolic equations to represent physical structure or chemical change.
- (3) You will be expected to use basic biology knowledge in a variety of freshman classes (Science Content Standard 3).
- Describe the structure and function of a cell.
  - Explain how simple molecules can build larger organic molecules within living organisms.
  - Identify organisms based on morphological and physiological characteristics.
  - Explain how a species can change through mutation and natural selection and how these changes affect an ecosystem (e.g., adaptation, interdependence).
  - Describe the systems of the human body (e.g., nervous, muscular) and the factors that influence how the human body functions.
  - Discuss the basic concepts of chromosomes, genes (DNA), and cell specialization.

- Explain the basic concepts of heredity, environment, adaptation, and change.
  - Distinguish between instinctive and learned behavior.
  - Know and understand the reproductive and developmental processes of plants and animals.
- (4) You will be expected to use basic space and earth science knowledge in a variety of freshman classes (Science Content Standard 4), including:
- Components of the universe.
  - Origin and development of the earth system.
  - Composition and characteristics of the Earth's structure.
  - Fundamental weather processes.
  - Sources and patterns of water (i.e., water cycle).
  - Motion and energy processes of the solar system (e.g., rotation, revolution).
- (5) Compare and contrast how people use technology differently. For example, your class may discuss how countries use nuclear technology to achieve different goals (Science Content Standard 5).
- (6) Apply scientific thinking to real problems and understand common connections (Science Content Standard 6).
- Understand that knowledge changes as new information becomes available and new theories replace old ones.
  - Recognize that knowledge gained from studying one part of the universe can often be applied to other parts.
  - Recognize that progress in science affects and is affected by economics, politics, and cultural values.
  - Read and understand the issues discussed in the science sections of such publications as *Time*, *Newsweek*, and *U.S. News and World Report*.
  - Identify cause and effect relationships.