

The College Board's College-Level Examination Program (CLEP)

Review Dates: September 1983; December 1990; March 1996; August 2002

Effective Dates: See specific examinations.

Organization Description: The College Board is a national nonprofit membership association whose mission is to prepare, inspire, and connect students to college and opportunity. Founded in 1900, the association is composed of more than 4,200 schools, colleges, universities and other educational organizations. Each year, the College Board serves over three million students and their parents, 22,000 high schools, and 3,500 colleges through major programs and services in college admissions, guidance, assessment, financial aid, enrollment, and teaching and learning. The College Board is committed to the principles of excellence and equity, and that commitment is embodied in all of its programs, services, activities and concerns.

Operational phases of most College Board programs are carried out under a contract with Educational Testing Service (ETS) in Princeton, New Jersey, a separate and independently governed organization. In addition to the College Board's headquarters in New York City, there are regional offices in every section of the country.

In 1966, the College Board introduced the College-Level Examination Program, funded substantially by both the Carnegie Corporation of New York and the College Board. The idea for such a program had been conceived by a number of educators, and was promoted vigorously by John Gardner and other Carnegie officials. ETS, under the leadership of Henry Chauncey, had moved to develop a set of comprehensive tests of college-level achievement that became the basis for the first CLEP "General" examinations.

The idea of awarding credit-by-examination had been around for many years, but it had yet to become a systematic, widely available option. The preferred method of granting college credit required that learning take place in a classroom. With the advent of CLEP, the idea became a reality—anyone could receive credit for learning that had been attained outside the traditional college or

university setting. In fact, they could get credit for learning that had taken place anywhere at any time.

The CLEP program made a transition in 2001 from a paper-based examination format to exams that are administered on computer. All examinations are administered on computer through test centers at two- and four-year colleges throughout the United States. These examinations include subjects that are generally taught in the first two years of an undergraduate college degree program. Topics include: Composition & Literature, Science & Mathematics, Foreign Languages, History & Social Sciences, and Business. College faculty who teach the equivalent course develop CLEP exams. More than 600 college faculty from two- and four-year colleges are involved in developing and setting the standards for the examinations. The structure of each examination is based on the results of curriculum surveys of introductory college-level courses. An overview of the examination descriptions may be found on the CLEP Web site: www.collegeboard.com/clep. Please see individual CLEP Test Information Guides for complete test descriptions. CLEP Program Objectives are: (1) To provide a rigorous assessment that allows individuals to earn credit for introductory courses currently taught at two- and four-year institutions; (2) To assist colleges and universities by developing examinations that best match the curriculum of introductory courses as they are taught across the nation; (3) To develop examinations that are of highest psychometric quality to ensure the establishment and maintenance of valid credit-granting policies; (4) To offer able and bright students the opportunity to earn credit by examination, exemption, and/or placement in their pursuit of an undergraduate degree; (5) To help traditional students, older students, part-time students, and working women and men an opportunity to advance their education; and (6) To provide the best customer service and test delivery product possible, to testing colleges and test-takers alike.

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Source of Official Student Records: CLEP Transcript Request Service, P.O. Box 6600, Princeton, NJ 08541-6600, Phone: (800) 257-9558, E-mail: clep@info.collegeboard.org.

How Examination Results Are Reported: In 2001, the College Board converted all of its 34 paper-based examinations to a computer-based testing (CBT) mode of delivery for national testing and subsequently military testing through the Defense Activity for Non-Traditional Educational Services (DANTES). It was planned to have the old paper-based testing program phased out by 2003.

The CBT platform provided several advantages and improved test development processes, including the opportunity to more rapidly pre-test items, repackage forms, introduce new item types, simplify test center administrative support, and provide instant scoring for candidates.

While the CLEP CBT proved to be a successful option for the college-based testing program, unfortunately, it did not prove to be a viable sole solution for testing the military for a variety of reasons. Among these reasons are challenges in addressing Department of Defense (DoD) security requirements while meeting program requirements for delivering stable and secure exams.

In order to continue to provide the CLEP exams to military personnel, the College Board examined ways in which the military testing program could be revised to ensure that CLEP exams could continue to be delivered to military candidates in numerous environments, whether it be at a state-side base, on an aircraft carrier, a submarine, or in a remote overseas location. One key component of meeting the delivery requirements included continuing to offer CLEP in a paper-based format. After reviewing the exam titles, volumes, comparability issues, and consulting with DANTES, it was decided to move forward with redeveloping 14 CLEP paper-based exams from CBT item pools. These 14 titles represent high-volume examinations that should not present significant comparability issues based on item type.

After formulating a plan for developing the 14 paper-based exams approved by ACE in 2003, an ACE review team went back to the College Board at ETS in March 2005 to review the statistical analyses for the newly developed paper-based exams.

Summary of ACE Review: ACE determined that a program review was merited by the CLEP examinations. The review was conducted at the request of The College Board at ETS in Princeton, New Jersey. Technical and executive staff from The College Board and Educational Testing Service made extensive presentations, supported by detailed reports and analyses, across the spectrum of technical and exam content areas. They were available throughout the two-day review process to answer questions and explore issues, as necessary. The American Council on Education team members concluded that CLEP examinations were worthy of academic credit recommendations.

Content Validity: The content team members reviewed the manner in which The College Board, in conjunction with the support services of Educational Testing Service, employed experienced faculty in shaping content specifications, writing and reviewing items, individually and as a whole, and various rigorous quality assurance measures used in continually monitoring current and future administrations.

Team members noted that exam items exhibit tactful use of gender-based pronouns and inclusive language is used throughout the test materials. Additionally, they noted that examinations are very well designed for measuring the success of a learner's listening and reading skills and knowledge of grammar and vocabulary of foreign languages. Security and integrity issues for the completion of the examinations were judged to be appropriate. The team concluded that the procedures and managerial controls in place meet or exceed academic and industry standards and therefore insure that ACE standards are met.

Technical Adequacy: Examinations in 35 different subject areas are available through the CLEP program. Overall the technical team found that both the American Council on Education and industry standards for developing and reviewing items are met. Test content validity is supported first through curriculum surveys to evaluate and modify test content as necessary to reflect current curriculum. Results are reviewed by content specialists and faculty development committees who formulate content specifications for the examinations. Once content specifications are formulated, the development committees write items for inclusion in the examinations. Examinations are administered by computer at more than 1,300 colleges and universities. Data analyses are complete and according to accepted professional stan-

dards. Reliability and validity are at or beyond industry norms. The conversion to CBT has led to the rapid expansion of the item pool allowing for the immediate review and replacement, if needed, of items or entire testlets (grouping of test items). The use of testlets has allowed for a multiple alternate forms, which has also enhanced the security of the various CLEP exams. Strict statistical parameters and automatic flagging of items not meeting their criteria have also enhanced the relevancy of the CLEP exams. This is particularly important for the exams that are in a fluid environment which experiences rapid change, such as information systems and business law. Based on the available statistical data, test completion time is not a problem, which allows for the use of pretest items in the testlets.

COMPOSITION AND LITERATURE

American Literature

ACE Transcript Data: CLEP-0010

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours of credit are recommended.

Effective Dates: January 1978–June 2001, minimum score 46; July 2001–Present, minimum score 50.

Description: The American Literature examination covers material that is usually taught in a two-semester survey course (or the equivalent) at the college level. It deals with the prose and poetry written in the United States from colonial times to the present. It is primarily a test of knowledge about literary works their content, their background, and their authors but also requires familiarity with the terminology used by literary critics and historians. The examination emphasizes fiction and poetry and deals to a lesser degree with the essay, drama, and autobiography. In both coverage and approach, the examination resembles the chronologically organized survey of American literature offered by many colleges. It assumes that candidates have read widely and developed an appreciation of American literature, know the basic literary periods, and have a sense of the historical development of American literature. The test contains 100 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time. An optional essay section can be taken in addition to the multiple-choice test. The essay section

is graded by the institution that requests it and continues to be administered in a paper-and-pencil format.

Skills Measured:

10-15% The Colonial Period (1620-1830) 25% The Romantic Period (1830-1870)

25% The Period of Realism and Naturalism (1870-1910)

25% The Modernist Period (1910-1945)

10-15% The Contemporary Period (1945-Present)

Analyzing and Interpreting Literature

ACE Transcript Data: CLEP-0011

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours of credit are recommended.

Effective Dates: January 1978–June 2001, minimum score 49; July 2001–Present (computer-based), minimum score 49; March 2004–Present (new paper-and-pencil and computer-based versions), minimum score 50.

Description: Questions on the Analyzing and Interpreting Literature examination require candidates to demonstrate the following abilities:

- Ability to read prose, poetry, and drama with understanding
- Ability to analyze the elements of a literary passage and to respond to nuances of meaning, tone, imagery, and style
- Ability to interpret metaphors, to recognize rhetorical and stylistic devices, to perceive relationships between parts and wholes, and to grasp a speaker's or author's attitudes
- Knowledge of the means by which literary effects are achieved
- Familiarity with the basic terminology used to discuss literary texts.

The examination emphasizes comprehension, interpretation, and analysis of literary works. A specific knowledge of historical context (authors and movements) is not required, but a broad knowledge of basic literary terminology is assumed. The following outline indicates the relative emphasis given to the various types of literature and the periods from which the passages are taken. The approximate percentage of exam questions per classification is noted within each main category below.

Skills Measured:

Genre

35-45% Poetry

35-45% Prose (fiction and nonfiction)

15-30% Drama

National Traditions

50-65% *British literature*

30-45% *American literature*

5-15% *Works in translation literature*

Period

3-7% *Classical and pre-Renaissance*

20-30% *Renaissance and 17th Century*

35-45% *18th and 19th Centuries*

25-35% *20th Century*

Freshman College Composition

ACE Transcript Data: CLEP-0017

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours of credit are recommended.

Effective Dates: January 1978–June 2001, minimum score 44; July 2001–Present, minimum score 50.

Description: The Freshman College Composition examination measures skills required in most first-year English courses. It addresses elements of language and grammar; various types of writing, both formal and informal; and limited analysis and interpretation of short passages of prose and poetry. The examination assumes that candidates know the fundamental principles of rhetoric and can apply the principles of standard written English. In addition, the test requires familiarity with the research paper and reference skills. An optional essay section, which is required if the institution to which the candidate is applying requests a writing sample, is also available. This optional section requires candidates to demonstrate their ability to write clearly and effectively. Candidates respond to two of three essay topics. An essay on the first topic is required, and candidates are advised to spend 35 to 40 minutes on it. For the second essay, candidates choose one of two topics, on which they should plan to spend 50 to 55 minutes. The essays are scored locally by faculty. The examination contains 90 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the Freshman College Composition examination measure students' writing skills both at the sentence level and within the context of passages. Elements of language and grammar, different styles of writing, and limited literary analysis of short prose and poetry selections are tested. It is designed so that an average student who has com-

pleted the first-year English requirement in composition can usually answer about half of the multiple-choice questions correctly. The subject matter of the Freshman College Composition examination is drawn from the following topics:

20% Ability to recognize and understand written English

—The examination measures candidates' awareness of a variety of logical, structural, and grammatical relationships within sentences. The questions test recognition of acceptable usage relating to the follow: syntax (parallelism, coordination, subordination, dangling modifiers); sentence boundaries (comma-splice, run-ons, sentence fragments); recognition of correct sentences; sentence variety; concord/agreement (subject-verb; verb tense; pronoun reference, shift, number); correct idiom; active/passive voice; logical comparison; punctuation.

Several kinds of question formats are intended to measure the skills above:

- *Identifying sentence errors*—requires candidates to identify wording that violates the standard conventions of written discourse.
- *Improving sentences*—requires candidates to choose the version of a phrase, clause, or sentence that best conveys the intended meaning of a sentence.

65% Ability to recognize logical development

—The examination measures recognition of the following in the context of works in progress (student drafts) or of published prose: organization; evaluation of evidence; awareness of audience, tone, and purpose; level of detail; consistence of topic focus (sustaining coherence between paragraphs); sentence variety; paragraph coherence; main idea, thesis; rhetorical effects and emphasis; use of language; evaluation of author's authority and appeal; evaluation of reasoning; shift in point of view.

The following kinds of multiple-choice questions measure writing skills in context:

- *Revising work in progress*—Candidates identify ways to improve an early draft of an essay.
- *Analyzing writing*—Two prose passages written in very different modes and a poetry selection appear in the examination. Candidates answer questions about each passage and poem and about strategies used by the author of each selection.
- *Analyzing and evaluating writers' choices*—Candidates answer questions

about tone, attitude, ambiguity, and clarity within short prompts.

15% Ability to use resource material—Tests familiarity with the following basic reference skills (skills are tested both in context and in individual questions): evaluating sources; integrating resource materials into the research paper; manuscript format and documentation; reference skills; use of reference books.

- *Recognizing and applying writing skills*—This type of question appears in the examination and tests candidates' ability to recognize and use proper research and documentation tools and skills.

English Composition (With and Without Essay)

ACE Transcript Data: CLEP-0001

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours of credit are recommended.

Effective Dates: 1978–1986, minimum score 530; January 1987–June 1993, minimum score 421–500; July 1993–June 2001, minimum score 420–500; July 2001–Present, minimum score 50.

Description: The English Composition examination measures the skills required in most first-year college composition courses. It measures the writing skills needed for college assignments and in particular for writing that explains, interprets, analyzes, presents, or supports a point of view. The examination does not cover some topics included in first-year college writing courses, such as research skills or literary analysis; nor does it require knowledge of grammatical terms as such. However, the student will need to apply the principles and conventions expected of academic writing discourse. Two versions of the test are offered: an all multiple-choice version and a version with an essay. The multiple-choice version of the examination contains approximately 90 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. The version with the essay has two separately timed sections. Section I contains approximately 50 questions to be answered in 45 minutes. Some of these are pretest questions that will not be scored. Section II is comprised of one essay question to be answered in 45 minutes. In either version, any time candidates spend on tutorials or providing personal information is in addition to the actual testing time. The essay is scored by college faculty who teach writing courses. Each essay is read

and assigned a rating by two scorers; the sum of the two ratings is weighted and then combined with the candidate's multiple-choice score. The resulting combined score is reported as a scaled score between 20 and 80. Separate scores are not reported for the multiple-choice and essay sections. Policies of colleges differ with regard to their acceptance of the two versions of the English Composition examination. Some grant credit only for the version with essay; others grant credit for either of the two versions. Many colleges grant six semester hours (or the equivalent) of credit toward satisfying a liberal arts or distribution requirement in English; others grant six credit hours of course credit for a specific first-year composition or English course that emphasizes expository writing.

Skills Measured: The multiple-choice questions of the examination measure students' writing skills both at the sentence level and within the context of passages. The current examination in English Composition reflects a greater emphasis on revising work in progress than did previous forms of the test. The examination is designed so that average students who have completed the general education requirement in English composition can usually answer about half of the questions correctly.

Skills at the Sentence Level

The examination measures the candidate's awareness of a variety of logical, structural, and grammatical relationships within a sentence (these skills are tested by approximately 55 percent of the all-multiple-choice version and 30 percent of the multiple-choice questions in the version with essay). Questions test recognition of acceptable usage relating to: sentence boundaries; economy and clarity of expression; concord/agreement (subject-verb; verb tense; pronoun reference, shift, number); active/passive voice; diction and idiom; syntax (parallelism, coordination, subordination, dangling modifiers); sentence variety

Several kinds of question formats throughout the test measure these sentence-level skills:

Identifying Sentence Errors—This type of question appears in both versions of the exam. It requires the candidate to identify wording that violates the standard conventions of written discourse.

Improving Sentences—This type of question appears in both versions. It requires the candidate to choose the phrase,

clause, or sentence that best conveys the intended meaning of the sentence.

Restructuring Sentences—This type of question appears only in the all-multiple-choice version. The candidate is given a sentence to reword in order to change emphasis or improve clarity. He or she then must choose from five options the phrase that would most likely appear in the new sentence.

Skills in Context

Questions in approximately 45 percent of the all-multiple-choice version and 20 percent of the version with essay measure recognition of the following in the context of works in progress or of publishing prose: main idea, thesis; organization of ideas in the paragraph or essay; relevance of evidence, sufficiency of detail, levels of specificity; audience and purpose (effect on style, tone, language, or argument); logic of argument (inductive, deductive reasoning); coherence within and between paragraphs; rhetorical emphasis, effect; sustaining tense or point of view; sentence combining, sentence variety

The following kinds of questions measure writing skills in context:

Revising Work in Progress—This type of question appears in both versions of the exam. The candidate identifies ways to improve an early draft of an essay.

Analyzing Writing—Two prose passages written in very different modes appear only in the all-multiple-choice version. The candidate answers questions about each passage and about the strategies used by the author of each passage.

The Essay

This section comprises 50 percent of the version with essay. The student is expected to present a point of view in response to a topic and to support it with a logical argument and appropriate evidence. The essay must be typed on the computer.

Scoring the Essays

Shortly after each administration of the CLEP English Composition with Essay examination, college English faculty from throughout the country score the essays. Each essay is scored independently by two different readers, and the two scores are then combined. This score is weighted approximately equally with the score from the multiple-choice section, then combined with it to yield the reported score for the test. The college English teachers who score the essay expect that the writer has a command of English grammar and sentence structure

and can use words precisely; they also expect that the essay will be organized, the ideas will be presented logically, and the examples will be pertinent. These are the basic requirements for a score in the middle of the scoring scale. If the essay writer fails in any of these important aspects of a good essay, then the essay is given a lower score; if the essay does any of these very well or displays additional qualities of good writing, particularly a strong development of the argument, then the essay receives a higher score.

English Literature

ACE Transcript Data: CLEP-0016

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours of credit are recommended.

Effective Dates: January 1978–June 2001, minimum score 46; July 2001–Present, minimum score 50.

Description: The English Literature examination covers material usually taught in a two-semester course (or the equivalent) at the college level. The test is primarily concerned with major authors and literary works, but it also includes questions on some minor writers. Candidates are expected to be acquainted with common literary terms such as metaphor and personification, and basic literary forms, such as the sonnet and the ballad. In both coverage and approach, the examination resembles the historically organized survey of English literature offered by many colleges. It assumes that candidates have read widely and developed an appreciation of English literature, know the basic literary periods, and have a sense of the historical development of English literature. The examination contains 95 questions to be answered in 90 minutes. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: The examination deals with literature from Beowulf to the present. Familiarity with and understanding of major writers is expected, as is knowledge of literary periods and common literary terms, themes, and forms. Some of the questions on the examination ask candidates to identify the author of a representative quotation or to recognize the period in which an excerpt was written. The English Literature examination measures both knowledge and ability. The percentages below show the relative emphasis given to each; however, most questions draw on both:

35-40% Knowledge of: Literary background, Identification of authors, Metrical patterns, Literary references, and Literary terms

60-65% Ability to: Analyze the elements of form in a literary passage, Perceive meanings, Identify tone and mood, Follow patterns of imagery, Identify characteristics of style, and Comprehend the reasoning in an excerpt of literary criticism

Humanities

ACE Transcript Data: CLEP-0003

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours of credit are recommended.

Effective Dates: July 1993-July 2001, minimum score 420-500; July 2001-Present, minimum score 420-500.

Description: The Humanities examination tests general knowledge of literature, art, and music. It is broad in its coverage, with questions on all periods from classical to contemporary and in many different fields: poetry, prose, philosophy, history of art, music, dance, and theater. The examination requires candidates to demonstrate their understanding of the humanities through recollection of specific information, comprehension and application of concepts, and analysis and interpretation of various works of art. Because the exam is very broad in its coverage, it is unlikely that any one person will be well informed about all the fields it covers. The exam contains 140 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials or providing personal information is in addition to the actual testing time. For candidates with satisfactory scores on the Humanities examination, colleges may grant up to six semester hours (or the equivalent) of credit toward fulfillment of a distribution requirement. Some may grant credit for a particular course that matches the examination in content.

Skills Measured: The exam questions, drawn from the entire history of Western art and culture, are fairly evenly divided among the following periods: Classical, Medieval and Renaissance, 17th and 18th centuries, 19th century, and 20th century. In addition, there are questions that draw on other cultures, such as African and Asian. Some of the questions cross disciplines and/or chronological periods, and a substantial number test knowledge of terminology, genre, and style. Ques-

tions on the Humanities examination require candidates to demonstrate the abilities listed below, in the approximate percentages indicated. Some questions may require more than one of the abilities.

- Knowledge of factual information (names, works, etc.) (50 percent of the examination)
- Recognition of techniques such as rhyme scheme, meter, and matters of style, and the ability to identify them as characteristics of certain writers, artists, schools, or periods (30 percent of the examination)
- Understanding and interpretation of literary passages and art reproductions that are likely to be unfamiliar to most candidates (20 percent of the examination) The subject matter of the Humanities examination is drawn from the following topics:

50% Literature : 10% Drama; 15-20% Poetry; 10-15% Fiction; and 10% Non-fiction (including philosophy)

50% Fine Arts: 20% Visual arts (painting, sculpture, etc.); 15% Music; 10% Performing arts (film, dance, etc); and 5% Architecture.

FOREIGN LANGUAGES

French

ACE Transcript Data: CLEP-0015

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours or 12 semester hours are recommended depending on the score achieved.

Effective Dates: Prior to July 2001: (Level 1) a minimum score of 42 for 6 semester hours; (Level 2) a minimum score of 45 for 12 semester hours; July 2001-Present: (Level 1) a minimum score of 50 for 6 semester hours; (Level 2) a minimum score of 62 for 12 semester hours.

Description: The French Language Examination is designed to measure knowledge and ability equivalent to that of students who have completed two to four semesters of college French language study. The examination focuses on skills typically achieved from the end of the first year through the second year of college study; material taught during both years is incorporated into a single examination. The examination contains 121 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. There are three separately timed sections. The three sections are weighted so that

each question contributes equally to the total score. Any time candidates spend on tutorials or providing personal information is in addition to the actual testing time. Most colleges that award credit for the French Language Examination award either two or four semesters of credit, depending on the student's scores on the exam.

Skills Measured: Candidates must demonstrate their ability to comprehend written and spoken French by answering various types of questions. The following components of reading and listening skills are tested in the French Language Examination:

15% Section I: Listening: Rejoinders—Listening comprehension through short oral exchange

25% Section II: Listening: Dialogues and Narratives—Listening comprehension through longer spoken selections

60% Section III: Reading—10% Part A. Discrete sentences (vocabulary and structure) 20%; Part B. Short cloze passages (vocabulary and structure) 30%; and Part C. Reading passages and authentic stimulus materials (reading comprehension)

German

ACE Transcript Data: CLEP-0036

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours or 12 semester hours are recommended depending on the score achieved.

Effective Dates: Prior to July 2001: (Level 1) a minimum score of 36 for six semester hours; (Level 2) a minimum score of 42 for 12 semester hours; July 2001-Present: (Level 1) a minimum score of 50 for 6 semester hours; (Level 2) a minimum score of 63 for 12 semester hours.

Description: The German Language examination is designed to measure knowledge and ability equivalent to that of students who have completed two to four semesters of college German Language study. The examination focuses on skills typically achieved from the end of the first year through the second year of college study; material taught during both years is incorporated into a single examination. The examination is administered in three separately timed sections: Sections I and II: Listening; Section III: Reading. The examination contains 120 questions to be answered in 90 minutes. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time. The three sections are

weighted so that each question contributes equally to the total score. Any time candidates spend on tutorials or providing personal information is in addition to the actual testing time. Most colleges that award credit for the German Language examination award either two or four semesters of credit, depending on the student's scores on the exam.

Skills Measured: Questions on the German Language examination require examinees to demonstrate the abilities listed in each section below:

40% Sections I and II: Listening 15% Understanding of spoken language through short stimuli or everyday situations and 25% Ability to understand the language as spoken by native speakers in longer dialogues and narratives

60% Section III: Reading 18% Vocabulary mastery: meaning of words and idiomatic expressions in the context of sentences and paragraphs; 18% Grammatical control: ability to identify usage that is structurally correct and appropriate; and 24% Reading comprehension: ability to read and understand texts representative of various styles and levels of difficulty.

Spanish

ACE Transcript Data: CLEP-0037

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours or 12 semester hours are recommended depending on the score achieved.

Effective Dates: Prior to July 2001: (Level 1) a minimum score of 45 for 6 semester hours; (Level 2) a minimum score of 50 for 12 semester hours; July 2001–Present: (Level 1) a minimum score of 50 for 6 semester hours; (Level 2) a minimum score of 66 for 12 semester hours.

Description: The Spanish Language examination is designed to measure knowledge and ability equivalent to that of students who have completed two to four semesters of college Spanish language study. The exam focuses on skills typically achieved from the end of the first year through the second year of college study; material taught during both years is incorporated into a single exam. The examination contains 120 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. There are three separately timed sections. The three sections are weighted so that each question contributes equally to the total score. Any time candidates spend on tutorials or providing personal information is in addition to the actual testing time. There are two

Listening sections and one Reading section. Each section has its own timing requirements. • The two Listening sections together are about 30 minutes in length. The amount of time candidates have to answer a question varies according to the section and does not include the time they spend listening to the test material (40% of the total exam time). • The Reading section is 60 minutes in length (60% of the total exam time). Most colleges that award credit for the Spanish Language exam award either two or four semesters of credit, depending on the student's test scores.

Skills Measured: Questions on the Spanish Language examination require candidates to comprehend written and spoken Spanish. The subject matter is drawn from the following abilities:

15% Section I: Listening: Rejoinders—Listening comprehension through short oral exchanges

25% Section II: Listening: Dialogues and Narratives—Listening comprehension through longer spoken selections

60% Section III: Reading 16% Part A: Discrete sentences (vocabulary and structure); 20% Part B: Short cloze passages (vocabulary and structure); and 24% Part C: Reading passages and authentic stimulus materials (reading comprehension).

SOCIAL SCIENCES AND HISTORY

American Government

ACE Transcript Data: CLEP-0007

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 47; July 2001–Present, minimum score 50.

Description: The examination in American Government covers material that is usually taught in a one-semester introductory course in American government and politics at the college level. The scope and emphasis of the exam reflect what is most commonly taught in introductory American government courses that emphasize national government. The exam covers topics such as the institutions and policy processes of the federal government, the federal courts and civil liberties, political parties and interest groups, political beliefs and behavior, and the content and history of the Constitution. The exam contains 100 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any

time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the American Government examination require candidates to demonstrate one or more of the following abilities in the approximate proportions indicated.

■ Knowledge of American government and politics (about 55–60% of the exam)

■ Understanding of typical patterns of political processes and behavior (including the components of the behavioral situation of a political actor), the principles used to explain or justify various governmental structures and procedures (about 30–35% of the exam)

■ Analysis and interpretation of simple data that are relevant to American government and politics (10–15% of the exam)

The subject matter of the American Government examination is drawn from the following topics:

30–35% Institutions and policy processes: presidency, bureaucracy, and Congress—

The major formal and informal institutional arrangements and powers; structure, policy processes, and outputs; relationships among these three institutions and links between them and political parties, interest groups, the media, and public opinion

15–20% Federal courts, civil liberties, and civil rights—

Structure and processes of the judicial system with emphasis on the role and influence of the Supreme Court; the development of civil rights and civil liberties by judicial interpretation; the Bill of Rights; incorporation of the Bill of Rights; equal protection and due process

15–20% Political parties and interest groups—

Political parties (including their function, organization, mobilization, historical development, and effects on the political process); interest groups (including the variety of activities they typically undertake and their effects on the political process); elections (including the electoral process)

10–15% Political beliefs and behavior—

Processes by which citizens learn about politics; political participation (including voting behavior); public opinion; beliefs that citizens hold about their government and its leaders; political culture (the variety of factors that predispose citizens to differ from one another in terms of their political perceptions, values, attitudes, and activities); the influence of public opinion on political leaders

15-20% Constitutional underpinnings of American democracy—The development of concepts such as Federalism (with attention to intergovernmental relations); separation of powers; checks and balances; majority rules; minority rights; consideration that influenced the formulation and adoption of the Constitution; theories of democracy

Introduction to Educational Psychology

ACE Transcript Data: CLEP-0023

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: Prior to July 2001, minimum score 47; July 2001–Present, minimum score 50.

Description: The Introduction to Educational Psychology examination covers material that is usually taught in a one-semester undergraduate course in this subject. Emphasis is placed on principles of learning and cognition, teaching methods and classroom management, child growth and development, and evaluation and assessment of learning. The examination contains 100 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the Introduction to Educational Psychology examination require candidates to demonstrate one or more of the following abilities:

- Knowledge and comprehension of basic facts, concepts, and principles
- Association of ideas with given theoretical positions
- Awareness of important influences on learning and instruction
- Familiarity with research and statistical concepts and procedures
- Ability to apply various concepts and theories as they apply to particular teaching situations and problems.

The subject matter of the Introduction to Educational Psychology examination is drawn from the following topics:

5% Educational Aims or Philosophies—Life-long learning; moral/character development; preparation for careers; preparation for responsible citizenship; socialization

15% Cognitive Perspective—Attention and perception; chunking/encoding; memory capacity; mental imagery; organization of

long-term memory; problem solving; transfer

11% Behavioristic Perspective—Applications of behaviorism; Behavioral modification programs; Classical conditioning; Cognitive learning theory; Law of Effect; Operant conditioning; Schedules of reinforcement; Token economies

15% Development—Adolescence; Cognitive; Gender identity/sex roles; Language acquisition; Mental health; Moral; School readiness; Social

10% Motivation—Achievement motivation; Anxiety/stress; Locus of control/attribution theory; Learned helplessness; Intrinsic motivation; Reinforcement contingencies; Theories of motivation

17% Individual Differences—Aptitude/achievement; Creativity; Cultural influences; Exceptionalities in learning (e.g., giftedness, physical handicaps, and behavior disorders); Intelligence; Nature vs. nurture; Reading ability

12% Testing—Assessment of instructional objectives; Bias in testing; Classroom assessment (e.g., grading procedures and formative evaluation); Descriptive statistics; Norm- and criterion-referenced tests; Scaled scores/standard deviation; Test construction (e.g., classroom tests); Test reliability; Test validity; Use and misuse of assessment techniques

10% Pedagogy—Advance organizers; Bilingual/ESL instruction; Clarity/organization; Classroom management; Cooperative learning; Discovery and reception learning; Instructional design and technique; Psychology of content areas; Teacher expectations/Pygmalion effect/wait time

5% Research Design and Analysis—Experiments; Longitudinal research; Qualitative research/case studies; Research analysis and statistics; Surveys.

History of the United States I

ACE Transcript Data: CLEP-0008

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 47; July 2001–Present, minimum score 50.

Description: The History of the United States I examination covers material that is usually taught in the first semester of what is often a two-semester course in United States history. The examination covers the period of United States history from the Spanish and French coloniza-

tions to the end of Reconstruction, with the majority of the questions on the period of nationhood. In the part covering the 17th and 18th centuries, emphasis is placed on the English colonies. The examination contains 120 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the History of the United States I examination require candidates to demonstrate one or more of the following abilities:

- Identification and description of historical phenomena
- Analysis and interpretation of historical phenomena
- Comparison and contrast of historical phenomena

The subject matter of the History of the United States I examination is drawn from the following topics. The percentages next to the main topics indicate the approximate percentage of exam questions on that topic:

35% Political institutions, behavior, and public policy

25% Social developments

10% Economic developments

15% Cultural and intellectual developments

15% Diplomacy and international relations

About one-third of the questions deal with the period from 1500 to 1789, and about two-thirds are on the period from 1790 to 1877.

The following are among the specific topics tested:

The character of Colonial society; British relations with the Atlantic colonies in North America; the motivations and character of American expansionism; the content of the constitution and its amendments, and their interpretation by the Supreme Court; the growth of political parties; the changing role of government in American life; the intellectual and political expressions of nationalism; agrarianism, abolitionism, and other such movements; long-term demographic trends; the process of economic growth and development; the origins and nature of black slavery in America; immigration and the history of racial and ethnic minorities; the causes and impacts of major wars in American history; major movements and individual figures in the history of American arts and letters;

major movements and individual figures in the history of women and the family.

History of the United States II

ACE Transcript Data: CLEP-0009

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 46; July 2001–Present, minimum score 50.

Description: The History of the United States II examination covers material that is usually taught in the second semester of what is often a two semester course in United States history. The examination covers the period of United States history from the end of the Civil War to the present, with the majority of the questions on the 20th century. The examination contains 120 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the History of the United States II examination require candidates to demonstrate one or more of the following abilities:

- Identification and description of historical phenomena
- Analysis and interpretation of historical phenomena
- Comparison and contrast of historical phenomena

The subject matter of the History of the United States II examination is drawn from the following topics. The percentages next to the main topics indicate the approximate percentage of exam questions on that topic.

Topical Specifications:

35% Political institutions, behavior, and public policy

25% Social developments

10% Economic developments

15% Cultural and intellectual developments

15% Diplomacy and international relations

Chronological Specifications:

30% 1865–1914

70% 1915–present

The following are among the specific topics tested: the motivations and character of American expansionism; the content of constitutional amendments and their interpretations by the Supreme Court; the changing nature of agricultural life; the development of American political parties; the emergence of regulatory

and welfare-state legislation; the intellectual and political expressions of liberalism, conservatism, and other such movements; long-term demographic trends; the process of economic growth and development; the changing occupational structure, nature of work, and labor organization; immigration and the history of racial and ethnic minorities; urbanization and industrialization; the causes and impacts of major wars in American history; major movements and individual figures in the history of American arts and letters; trends in the history of women and the family.

Human Growth and Development

ACE Transcript Data: CLEP-0021

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 45; July 2001–Present, minimum score 50.

Description: The Human Growth and Development examination (Infancy, Childhood, Adolescence, Adulthood, and Aging) covers material that is generally taught in a one-semester introductory course in developmental psychology or human development. An understanding of the major theories and research related to the broad categories of physical, cognitive, and social development is required, as is the ability to apply this knowledge. The examination contains 90 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the test require candidates to demonstrate one or more of the following abilities:

- Knowledge of basic facts and terminology
- Understanding of generally accepted concepts and principles
- Understanding of theories and recurrent developmental issues
- Applications of knowledge to particular problems or situations

The subject matter of the Human Growth and Development examination is drawn from the following categories:

10% Theories of development—Cognitive-developmental; Learning; Psychoanalytic

5% Research strategies and methodology—Case study; Correlational; Cross-sec-

tional; Experimental; Longitudinal; Observational

10% Biological development throughout the lifespan—Development of brain and nervous system; Heredity, genetics, genetic testing; Influences of drugs; Motor development; Nutritional influences; Prenatal influences; Physical growth and maturation, aging; Prenatal influences; Sexual maturation

7% Perceptual development throughout the lifespan—Critical periods; Hearing; Sensorimotor activities; Sensory deprivation; Vision

12% Cognitive development throughout the lifespan—Environmental influences; Information processing; Memory; Piaget, Jean; Play; Problem solving; Vygotsky, Lev

8% Language development—Development of syntax; Environmental, cultural, and genetic influences; Language and thought; Pragmatics; Semantic development; Vocalization and sounds

4% Intelligence throughout the lifespan—Concepts of intelligence and creativity; Developmental stability and change; Heredity and environment

10% Social development throughout the lifespan—Aggression; Attachment; Gender; Moral development; Peer relationships; Prosocial behavior; Social cognition

8% Family and society throughout the lifespan—Abuse and neglect; Cross-cultural and ethnic variation; Family relationships; Family structure; Mass media influences; Social/class influences

8% Personality and emotions—Achievement motivation; Development of emotions; Erikson, Erik; Freud, Sigmund; Locus of control; Self-control and self-regulation; Temperament

8% Learning—Classical conditioning; Discrimination and generalization; Habituation; Observational learning and imitation; Operant conditioning

5% Schooling and intervention—Applications of developmental principles within the school; Facilitating role transitions in adulthood; Intervention programs and services; Preschool, day care, elder care; Training in parenting skills

5% Atypical development—Alzheimer's, dementia, Parkinson's; Antisocial behavior, delinquency; Asocial behavior, fears, phobias, obsessions; Attention-deficit/hyperactivity disorder; Autism; Consequences of hereditary diseases; Giftedness; Learning disabilities; Mental retardation.

Principles of Macroeconomics

ACE Transcript Data: CLEP-0027

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 44; July 2001–Present, minimum score 50.

Description: The Principles of Macroeconomics examination covers material that is usually taught in a one semester undergraduate course in introductory macroeconomics. This aspect of economics deals with principles of economics that apply to an economy as a whole, particularly the general price level, output and income and interrelations among sectors of the economy. The test places particular emphasis on the determinants of aggregate demand and aggregate supply, on monetary and fiscal policy tools that can be used to achieve particular policy objectives. Within this context, candidates are expected to understand measurement concepts such as gross domestic product, consumption, investment, unemployment, inflation, inflationary gap, and recessionary gap. Candidates are also expected to demonstrate knowledge of the institutional structure of the Federal Reserve Bank and the monetary policy tools it uses to stabilize economic fluctuations and promote long-term economic growth, as well as the tools of fiscal policy and their impacts on income, employment, price level, deficits, and interest rate. Basic understanding of foreign exchange markets, balance of payments, effects of currency, appreciation and depreciation are also expected. The examination contains 80 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the Principles of Macroeconomics examination require candidates to demonstrate one or more of the following abilities.

- Understanding of important economic terms and concepts
- Interpretation and manipulation of economic graphs
- Interpretation and evaluation of economic data
- Application of simple economic models

The subject matter of the Principles of Macroeconomics examination is drawn from the following topics:

8-12% Basic economic concepts—Scarcity; the nature of the economic system; Opportunity costs and production possibilities curves; Demand, supply, and price determination

10-18% Measurement of economic performance—Gross domestic and national products and national income concepts; Inflation and price indices; Unemployment

60-70% National income and price determination

30-35% Aggregate supply and demand—Keynesian and classical analysis; Circular flow; Components of aggregate supply and demand; Multiplier; Fiscal policy; Monetary policy; Long vs. short run

10-15% Money and banking—Definition of money and its creation; Tools of central bank policy; Role of central bank

20-25% Effectiveness of fiscal and monetary policy—Interaction of fiscal and monetary policy; Debts and deficits; Stabilization policies for aggregate demand and supply shocks; Keynesian; Monetarist; Supply-Sider; and rational expectation theories

10-15% International economics and growth—Comparative advantage, trade policy, international finance, and exchange rates; Economic growth.

Principles of Microeconomics

ACE Transcript Data: CLEP-0030

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 41; July 2001–Present, minimum score 50.

Description: The Principles of Microeconomics examination covers material that is usually taught in a one semester undergraduate course in introductory microeconomics. This aspect of economics deals with the principles of economics that apply to the analysis of the behavior of individual consumers and businesses in the economy. Questions on this test require candidates to apply analytical techniques to hypothetical as well as real world situations and to analyze and evaluate economic decisions. Candidates are expected to demonstrate an understanding of how free markets work, and allocate resources efficiently. They should understand how individual consumers make economic decisions to maximize utility, and how individual firms make decisions to maximize profits. Candidates must be able to identify the characteristics of the different market structures and

analyze the behavior of firms in terms of price and output decisions. They should also be able to evaluate the outcome in each market structure with respect to economic efficiency, and identify cases in which private markets fail to allocate resources efficiently, and how government intervention fixes or fails to fix the resource allocation problem. It is also important to understand the determination of wages and other input prices in factor markets, and analyze and evaluate the distribution of income. The examination contains 80 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the Principles of Microeconomics examination require candidates to demonstrate one or more of the following abilities.

- Understanding of important economic terms and concepts
- Interpretation and manipulation of economic graphs
- Interpretation and evaluation of economic data
- Application of simple economic models

The subject matter of the Principles of Microeconomics examination is drawn from the following topics:

8-12% Basic economic concepts—Scarcity; the nature of economic systems; Opportunity costs and productive possibilities; Comparative advantage

60-70% The nature and function of the product market

15-20% Supply and demand—Price and quantity demanded; Basic implementation of policy

10-15% Consumer demand—Consumer choice: utility and demand theory; Elasticity

10-15% Firm's production, costs, and revenue—Marginal product and diminishing returns; Total, average, and marginal costs and revenue; Long-run costs and economies of scale

25-30% Profit-maximization—Pricing, revenue, and output, both in the long run and the short run and in the firm and the market; Perfect competition; Imperfect competition; Monopoly; Oligopoly and monopolistic competition; Efficiency, antitrust, and regulation

10-15% Factor market—Derived demand; Determination of wages and other factor prices; Distribution of income

4-6% Market failures and the role of the government—Externalities; Public good; Information economics.

Introductory Psychology

ACE Transcript Data: CLEP-0020

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 47; July 2001–Present, minimum score 50.

Description: The Introductory Psychology examination covers material that is usually taught in a one-semester undergraduate course in introductory psychology. It stresses basic facts, concepts, and generally accepted principles in the 13 areas listed in the following section. The examination contains 95 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the Introductory Psychology examination require candidates to demonstrate the following abilities:

- Knowledge of terminology, principles, and theory
- Ability to comprehend, evaluate, and analyze problem situations
- Ability to apply knowledge to new situations.

The subject matter of the Introductory Psychology examination is drawn from the following topics:

8-9% History, approaches, method—History of psychology; Approaches: biological, behavioral, cognitive, humanistic, psychodynamic; Research methods: experimental, clinical, correlational; Ethics in research

8-9% Biological bases of behavior—Neuroanatomy; Functional organization of the nervous system; Endocrine system; Physiological techniques; Genetics; Etiology

7-8% Sensation and perception—Receptor processes: vision, audition; Sensory mechanisms: thresholds, adaptation; Other senses: somesthesia, olfaction, gustation, vestibular system; Perceptual development; Perceptual processes; Attention

5-6% States of consciousness—Sleep and dreaming; Hypnosis and meditation; Psychoactive drug effects

10-11% Learning—Biological bases; Classical conditioning; Operant conditioning;

Observational learning; Cognitive process in learning

8-9% Cognition—Memory; Language; Thinking and problem solving; Intelligence and creativity

7-8% Motivation and emotion—Biological bases; Theories of motivation; Theories of emotion; Hunger, thirst, sex, pain; Social motivation

8-9% Developmental psychology—Theories of development; Dimensions of development: physical, cognitive, social, moral; Research methods: longitudinal, cross-sectional; Heredity–environment issues; Gender identity and sex roles

7-8% Personality—Personality theories and approaches; Assessment techniques; Research methods: idiographic, nomothetic; Self-concept, self-esteem; Growth and adjustment

8-9% Psychological disorders and health—Theories of psychopathology; Anxiety disorders; Affective disorders; Dissociative disorders; Somatoform disorders; Personality disorders; Psychoses; Health, stress, and coping

7-8% Treatment of psychological disorders—Insight therapies: psychodynamic and humanistic approaches; Behavioral therapies; Cognitive therapies; Biological and drug therapies; Community and preventive approaches

7-8% Social psychology—Group dynamics; Attribution processes; Interpersonal perception; Conformity, compliance, obedience; Attitudes and attitude change; Aggression/antisocial behavior

3-4% Statistics, test, and measurement—Samples, populations, norms; Reliability and validity; Descriptive statistics; Inferential statistics; Types of tests; Measurement of intelligence; Mental handicapping conditions.

Social Sciences and History

ACE Transcript Data: CLEP-0006

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 420–500; July 2001–Present, minimum score 50.

Description: The Social Sciences and History examination covers a wide range of topics from the social science and history areas. While the exam is based on no specific course, its content is drawn from introductory college courses that cover United States history, western civilization, world history, government/political science, economics, sociology, anthropol-

ogy, psychology, and geography. The primary objective of the exam is to give candidates the opportunity to demonstrate that they possess the level of knowledge and understanding expected of college students who meet a distribution or general education requirement in the social science/history areas. The Social Sciences and History examination contains 120 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: The Social Sciences and History examination requires candidates to demonstrate one or more of the following abilities:

- Familiarity with terminology, facts, conventions, methodology, concepts, principles, generalizations, and theories
- Ability to understand, interpret, and analyze graphic, pictorial, or written material
- Ability to apply abstractions to particulars, and to apply hypotheses, concepts, theories, and principles to given data

The content of the Social Sciences and History examination is drawn from the following topics:

40% History—Requires general knowledge and understanding of time- and place-specific human experiences. Topics covered include political, diplomatic, social, economic, intellectual, and cultural material

17% United States History—Requires a general understanding of historical issues from the colonial period to the present

15% Western Civilization—Covers ancient Western Asia, Greece, and Rome; medieval Europe and modern Europe, including its expansion and outposts in other parts of the world

8% World History Covers—Covers Africa, Asia, Australia, Europe, North America, and South America from prehistory to the present

13% Government/Political Science—including topics such as Comparative government; International relations; Methods; United States institutions; Voting and political behavior

10% Sociology—including topics such as Demography; Deviance; Family; Interaction; Methods; Social change; Social organization; Social stratification; Social theory

10% Economics, with emphasis on topics such as Economic measurements Interna-

tional trade Monetary and fiscal policy
Product markets Resource markets
Scarcity, choice, and cost

10% Psychology—including topics such as Aggression; Conformity; Group process; Methods; Performance; Personality; Socialization

10% Geography—including topics such as Distance; Ecology; Location; Regional geography; Space accessibility; Spatial interaction; Weather and climate

6% Anthropology—including topics such as Cultural anthropology; Ethnography.

Introductory Sociology

ACE Transcript Data: CLEP-0026

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 47; July 2001–Present, minimum score 50.

Description: The Introductory Sociology examination is designed to assess an individual's knowledge of the material typically presented in a one-semester introductory sociology course at most colleges and universities. The examination emphasizes basic facts and concepts as well as general theoretical approaches used by sociologists. Highly specialized knowledge of the subject and the methodology of the discipline is not required or measured by the test content. The examination contains 100 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the test require candidates to demonstrate the following abilities; some questions may require more than one of these abilities.

- Identification of specific names, facts, and concepts from sociological literature
- Understanding of relationships between concepts, empirical generalizations, and theoretical propositions of sociology
- Understanding of the methods by which sociological relationships are established
- Application of concepts, propositions, and methods to hypothetical situations
- Interpretation of tables and charts

The subject matter of the Introductory Sociology examination is drawn from the following topics:

20% Institutions—Economic; Educational; Family; Medical; Political; Religious

15% Social patterns—Community; Demography; Human ecology; Rural/urban patterns

20% Social processes—Collective behavior and social movements; Culture; Deviance and social control; Groups and organizations; Social change; Social interaction; Socialization

30% Social stratification (process and structure)—Aging; Power and social inequality; Professions and occupations; Race and ethnic relations; Sex and gender roles; Social class; Social mobility

15% The sociological perspective—History of sociology; Methods; Sociological theory.

Western Civilization I

ACE Transcript Data: CLEP-0032

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 46; July 2001–Present, minimum score 50.

Description: The Western Civilization I examination covers material that is usually taught in the first semester of a two-semester course in Western Civilization. Questions deal with the civilizations of Ancient Greece, Rome, and the Near East; the Middle Ages; the Renaissance and Reformation; and early modern Europe. Candidates may be asked to choose the correct definition of a historical term, select the historical figure whose political viewpoint is described, identify the correct relationship between two historical factors, or detect the inaccurate pairing of an individual with a historical event. Groups of questions may require candidates to interpret, evaluate, or relate the contents of a passage, a map, or a picture to other information, or to analyze and utilize the data contained in a graph or table. The examination contains 120 questions to be answered in 90 minutes. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the Western Civilization I examination require candidates to demonstrate the following abilities, with some questions calling on more than one of the abilities.

- Understanding important factual knowledge of developments in Western Civilization

- Ability to identify the causes and effects of major historical events
- Ability to analyze, interpret, and evaluate textual and graphic materials
- Ability to distinguish the relevant from the irrelevant
- Ability to reach conclusions on the basis of facts

The subject matter of the Western Civilization I examination is drawn from the following topics:

8-10% Ancient Near East—Political evolution; Religion, culture, and technical developments in and near the fertile crescent

15-17% Ancient Greece and Hellenistic Civilization—Political evolution to Periclean Athens; Periclean Athens to Peloponnesian Wars; Culture, religion, and thought of Ancient Greece; The Hellenistic political structure; The culture, religion, and thought of Hellenistic Greece

15-17% Ancient Rome—Political evolution of the Republic and of the Empire (economic and geographical context); Roman thought and culture; Early Christianity; The Germanic invasions; The late empire
23-27% Medieval History—Byzantium and Islam; Early medieval politics and culture through Charlemagne; Feudal and manorial institutions; The medieval Church; Medieval thought and culture; Rise of the towns and changing economic forms; Feudal monarchies; The late medieval church

13-17% Renaissance and Reformation—The Renaissance in Italy; The Renaissance outside Italy; The New Monarchies; Protestantism and Catholicism reformed and reorganized

10-15% Early Modern Europe, 1560-1648—The opening of the Atlantic; The Commercial Revolution; Dynastic and religious conflicts; Thought and culture.

Western Civilization II

ACE Transcript Data: CLEP-0033

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 47; July 2001–Present, minimum score 50.

Description: The Western Civilization II examination covers material that is usually taught in the second semester of a two-semester course in Western Civilization. Questions cover European history from the seventeenth century through the post-Second World War period

including political, economic, and cultural developments such as Scientific Thought, the Enlightenment, the French and Industrial Revolutions, and the First and Second World Wars. Candidates may be asked to choose the correct definition of a historical term, select the historical figure whose political viewpoint is described, identify the correct relationship between two historical factors, or detect the inaccurate pairing of an individual with a historical event. Groups of questions may require candidates to interpret, evaluate, or relate the contents of a passage, a map, a picture, or a cartoon to the other information or to analyze and use the data contained in a graph or table. The examination contains 120 questions to be answered in 90 minutes. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the Western Civilization II examination require candidates to demonstrate one or more of the following abilities.

- Understanding of important factual knowledge of developments in Western Civilization
- Ability to identify the causes and effects of major events in history
- Ability to analyze, interpret, and evaluate textual and graphic historical materials
- Ability to distinguish the relevant from the irrelevant
- Ability to reach conclusions on the basis of facts

The subject matter of the Western Civilization II examination is drawn from the following topics:

7-9% Absolutism and Constitutionalism, 1648-1715—The Dutch Republic; The English Revolution; France under Louis XIV; Formation of Austria and Prussia; The “westernization” of Russia

4-6% Competition for empire and economic expansion—Global economy of the eighteenth century; Europe after Utrecht, 1713-1740; Demographic change in the eighteenth century

5-7% The scientific view of the world—Major figures of the scientific revolution; New knowledge of man and society; Political theory

7-9% Period of Enlightenment—Enlightenment thought; Enlightened despotism; Partition of Poland

10-13% Revolution and Napoleonic Europe—The Revolution in France; The Revolution and Europe; The French Empire; Congress of Vienna

7-9% The Industrial Revolution—Agricultural and industrial revolution; Causes of revolution; Economic and social impact on working and middle class; British reform movement

6-8% Political and cultural developments, 1815-1848—Conservatism; Liberalism; Nationalism; Socialism; The Revolutions of 1830 and 1848

8-10% Politics and diplomacy in the Age of Nationalism, 1850-1914—The unification of Italy and Germany; Austria-Hungary; Russia; France; Socialism and labor unions; European diplomacy, 1871-1900

7-9% Economy, culture, and imperialism, 1850-1914—Demography World economy of the nineteenth century Technological developments Science, philosophy, and the arts Imperialism in Africa and Asia

10-12% The First World War and the Russian Revolution The causes of the First World War; The economic and social impact of the war; The peace settlements; The Revolution of 1917 and its effects

7-9% Europe between the wars—The Great Depression; International politics, 1919-1939; Stalin’s five-year plans and purges; Italy and Germany between the wars; Interwar cultural developments

8-10% The Second World War and contemporary Europe—The causes and course of the Second World War; Postwar Europe; Science, philosophy, the arts, and religion; Social and political developments.

SCIENCE AND MATHEMATICS

College Algebra

ACE Transcript Data: CLEP-0013

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978-July 2001, minimum score 46; July 2001-Present, minimum score 50.

Description: The College Algebra examination covers material that is usually taught in a one-semester college course in algebra. Nearly half of the test is made up of routine problems requiring basic algebraic skills; the remainder involves solving non-routine problems in which candidates must demonstrate their understanding of concepts. The test includes questions on basic algebraic operations; linear and quadratic equations, inequalities, and graphs; algebraic, exponential, and logarithmic functions; and miscellaneous other topics. It is assumed that candidates are familiar with currently taught algebraic

braic vocabulary, symbols, and notation. The test places little emphasis on arithmetic calculations, and it does not contain any questions that require the use of a calculator. However, an online scientific calculator (no graphing) will be available during the examination. The examination contains 60 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the College Algebra examination require candidates to demonstrate the following abilities in the approximate proportions indicated.

- Solving routine, straightforward problems (about 50 percent of the examination)
- Solving non-routine problems requiring an understanding of concepts and the application of skills and concepts (about 50 percent of the examination)

The subject matter of the College Algebra examination is drawn from the following topics:

25% Algebraic operations—Combining algebraic expressions; Factoring Simplifying algebraic fractions; Operating with powers and roots

20% Equations, inequalities, and their graphs—Linear equations and inequalities; Quadratic equations and inequalities; Systems of equations and inequalities

25% Algebraic, exponential, and logarithmic functions and their graphs—Domain; Range; Composition; Inverse of functions

30% Miscellaneous topics—Theory of equations; Sets; Real numbers; Complex numbers; Sequence and series.

College Algebra-Trigonometry

ACE Transcript Data: CLEP-0014

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978-July 2001, minimum score 45; July 2001-Present, minimum score 50.

Description: The College Algebra-Trigonometry examination covers material that is usually taught in a one-semester college course that includes both algebra and trigonometry. Such a course is usually taken by students who have studied algebra and geometry in high school, but need additional study of precalculus mathematics before enrolling in calculus and

other advanced courses at the college level. Approximately half of the test is made up of routine problems requiring basic algebraic and trigonometric skills; the remainder involves solving non-routine problems in which candidates must demonstrate their understanding of concepts. The algebra part of the test includes questions on basic algebraic operations; linear and quadratic equations, inequalities, and graphs; algebraic, exponential, and logarithmic functions; and miscellaneous other topics. The trigonometry part of the test includes questions on trigonometric functions and their relationships, evaluation of trigonometric functions of positive and negative angles, trigonometric equations and inequalities, graphs of trigonometric functions, trigonometry of the triangle, and miscellaneous other topics. It is assumed that the candidate is familiar with currently taught algebraic and trigonometric vocabulary and notation and with both radian and degree measure. The College Algebra-Trigonometry examination requires all of the knowledge and skills required by the separate examinations in College Algebra and Trigonometry. The combined examination contains 63 questions to be answered in 90 minutes. There are three separately timed sections.

- Part 1 consists of 30 algebra questions in 45 minutes; an online scientific calculator is provided, although there are no questions that require a calculator.
- Part 2 contains 13 questions to be answered in 15 minutes and does not allow the use of a calculator.
- Part 3 contains 20 questions to be answered in 30 minutes and requires the use of an online scientific calculator. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the test require candidates to demonstrate the following abilities in the approximate proportions indicated:

- Solving routine, straightforward problems (about 50 percent of the examination)
- Solving no routine problems requiring an understanding of concepts and the application of skills and concepts (about 50 percent of the examination).

The subject matter of the College Algebra portion of the examination is drawn from the following topics:

25% Algebraic operations—Combining algebraic expressions; Factoring; Simpli-

fying algebraic fractions; Operating with powers and roots

20% Equations, inequalities, and their graphs—Linear equations and inequalities; Quadratic equations and inequalities; Systems of equations and inequalities

25% Algebraic, exponential, and logarithmic functions and their graphs—Domain; Range; Composition; Inverse of functions

30% Miscellaneous topics—Theory of equations; Sets; Real numbers; Complex numbers; Sequence and series

Trigonometry (52% of exam)—Questions on the test require candidates to demonstrate the following abilities in the approximate proportions indicated:

- Solving routine problems involving basic trigonometric skills (about 60 percent of the examination)
- Solving non-routine problems requiring an understanding of concepts and the application of skills and concepts (about 40 percent of the examination).

The subject matter of the Trigonometry portion of the examination is drawn from the following topics:

25% Trigonometric functions and their relationships—Circular or wrapping functions; Determining a function from a given function; Cofunction relationships; Reciprocal relationships; Pythagorean relationships; Functions of two angles double angles and half angles Identities

15% Evaluation of trigonometric functions of angles

10% Trigonometric equations and inequalities

15% Interpreting graphs of trigonometric functions

15% Trigonometry of the triangle including the law of sines and the law of cosines

20% Miscellaneous—Inverse functions (arcsin, arccos, arctan); Polar coordinates.

Biology

ACE Transcript Data: CLEP-0018

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 46; July 2001–Present, minimum score 50.

Description: The Biology examination covers material that is usually taught in a one-year college general biology course. The subject matter tested covers the broad field of the biological sciences, organized into three major areas: molecular and cellular biology, organismal biology, and populational biology. The examination gives approximately equal weight to these three areas, and the ques-

tions relating to them are interspersed randomly throughout the test. The examination contains 115 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the Biology examination require candidates to demonstrate one or more of the following abilities.

- Knowledge of facts, principles, and processes of biology
- Understanding the means by which information is collected, how it is interpreted, how one hypothesizes from available information, how one draws conclusions and makes further predictions
- Understanding that science is a human endeavor with social consequences.

The subject matter of the Biology examination is drawn from the following topics:

33% Molecular and Cellular Biology—Chemical composition of organisms; Simple chemical reactions and bonds; Properties of water; Chemical structure of carbohydrates, lipids, proteins, nucleic acids; Origin of life; Cells; Structure and function of cell organelles; Properties of cell membranes; Comparison of prokaryotic and eukaryotic cells; Enzymes; Enzyme-substrate complex; Roles of coenzymes; Inorganic cofactors; Inhibition and regulation; Energy transformations; Glycolysis, respiration, anaerobic pathways; Photosynthesis; Cell division; Structure of chromosomes; Mitosis, meiosis, and cytokinesis in plants and animals; Chemical nature of the gene; Watson-Crick model of nucleic acids; DNA replication; Mutations; Control of protein synthesis: transcription, translation, post-transcriptional processing; Structural and regulatory genes; Transformation; Viruses

34% Organismal Biology—Structure and function in plants with emphasis on angiosperms; Root, stem, leaf, flower, seed, fruit; Water and mineral absorption and transport; Food translocation and storage; Plant reproduction and development; Alternation of generations in ferns, conifers, and flowering plants; Gamete formation and fertilization; Growth and development: hormonal control; Tropisms and photoperiodicity; Structure and function in animals with emphasis on vertebrates; Major systems (e.g., digestive, gas exchange, skeletal, nervous, circulatory,

excretory, immune); Homeostatic mechanisms; Hormonal control in homeostasis and reproduction; Animal reproduction and development; Gamete formation, fertilization; Cleavage, gastrulating, germ layer formation, differentiation of organ systems; Experimental analysis of vertebrate development; Extraembryonic membranes of vertebrates; Formation and function of the mammalian placenta; Blood circulation in the human embryo; Principles of heredity; Mendelian inheritance (dominance, segregation, independent assortment); Chromosomal basis of inheritance; Linkage, including sex-linked; Polymeric inheritance (height, skin color); Multiple alleles (human blood groups)

33% Population Biology—Principles of ecology; Energy flow and productivity in ecosystems; Biogeochemical cycles; Population growth and regulation (natality, mortality, competition, migration, density, K-selection); Community structure, growth, regulation (major biomes and succession); Habitat (biotic and abiotic factors); Concept of niche; Island biogeography; Evolutionary ecology (life history strategies, altruism, kin selection); Principles of evolution; History of evolutionary concepts; Lamarckian and Darwinian theories; Modern concepts of natural selection (differential reproduction, mutation, Hardy-Weinberg equilibrium, speciation, punctuated equilibrium); Adaptive radiation; Major features of plant and animal evolution; Concepts of homology and analogy; Convergence, extinction, balanced polymorphism, genetic drift; Classification of living organisms; Evolutionary history of humans; Principles of behavior; Stereotyped, learned social behavior; Societies (insects, birds, primates); Social biology; Human population growth (age composition, birth and fertility rates, theory of demographic transition); Human intervention in the natural world (management of resources, environmental pollution); Biomedical progress (control of human reproduction, genetic engineering).

Precalculus

ACE Transcript Data: CLEP-0035

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: March 2005–Present (new paper-and-pencil and computer-based versions), minimum score 50.

Description: The Precalculus examination covers skills and concepts usually found

in a one-semester college course. The examination is primarily concerned with an intuitive understanding of precalculus and demonstrated ability with its methods and applications. A knowledge of college mathematics is the preparatory skill for the Precalculus test.

Skills Measured: The examination consists of questions that require candidates to demonstrate the following abilities:

- Recall factual knowledge and perform routine mathematical manipulation
- Solve problems that demonstrate comprehension of mathematical ideas and concepts
- Solve nonroutine problems or problems that require insight, ingenuity, or higher-order mental processes.

Questions regarding the subject matter for the Precalculus examination are drawn from the following areas:

20% Performing operations on algebraic expressions; solving equations and inequalities, including linear, quadratic absolute value, polynomial, rational, radical, exponential, logarithmic, and trigonometric functions; and solving equations and performing symbolic operations and calculations using the graphing calculator

15% Understanding the general properties of functions

30% Recognizing and performing operations and transformations on functions, symbolically, graphically, and in tabular forms. Demonstrate an ability to understand and recognize functions (linear, quadratic, absolute value, square root, polynomial, rational, exponential, logarithmic, trigonometric, inverse trigonometric)

10% Demonstrating a knowledge of the analytic geometry of lines, circles, parabolas, ellipses, and hyperbolas

15% Understanding basic trigonometric functions and their inverses; basic trigonometric ratios and identities.

Calculus

ACE Transcript Data: CLEP-0038

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 41; July 2001–Present, minimum score 50.

Description: The Calculus examination covers skills and concepts that are usually taught in a one-semester college course in calculus. The content of each examination is approximately 60% limits and

differential calculus and 40% integral calculus. Algebraic, trigonometric, exponential, logarithmic, and general functions are included. The examination is primarily concerned with an intuitive understanding of calculus and experience with its methods and applications. Knowledge of preparatory mathematics, including algebra, plane and solid geometry, trigonometry, and analytic geometry is assumed. Students are not permitted to use a calculator during the CLEP Calculus examination. The examination contains 45 questions to be answered in 90 minutes. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the test require candidates to demonstrate the following abilities:

- Solving routine problems involving the techniques of calculus (about 50% of the examination)
- Solving nonroutine problems involving an understanding of the concepts and applications of calculus (about 50% of the examination).

The subject matter of the calculus examination is drawn from the following topics:

5% Limits—Statement of properties, e.g., limit of a constant, sum, product, or quotient; Limits that involve infinity; Continuity

55% Differential Calculus—The Derivative: definitions; derivatives of elementary functions; derivatives of sum, product, and quotient (including $\tan x$ and $\cot x$); derivative of a composite function, chain rule; derivative of an implicitly defined function; derivative of the inverse of a function (including $\arcsin x$ and $\arctan x$); derivatives of higher order; corresponding characteristics of graphs f , f' , and f'' ; statement (without proof) of the Mean Value Theorem; applications and graphical illustrations; relation between differentiability and continuity; use of L'Hôpital's rule (quotient and indeterminate forms). Applications of the Derivative: slope at a point; tangent lines and linear approximation; curve sketching; increasing and decreasing functions; relative and absolute maximum and minimum points; concavity; points of inflection; extreme value problems; velocity and acceleration of a particle moving along a line; average and instantaneous rates of change; related rates of change

40% Integral Calculus—Antiderivatives and Techniques of Integration: concept of

antiderivatives; basic integration formulas; integration by substitution (use of identities, change of variable). Applications of Antiderivatives: distance and velocity from acceleration with initial conditions; solutions of $y' = ky$ and applications to growth and decay. The Definite Integral: definition of the definite integral as the limit of a sequence of Riemann sums and approximations of the definite integral using rectangles and trapezoids; properties of the definite integral; the Fundamental Theorem. Applications of the Definite Integral: average value of a function on an interval; area.

College Mathematics

ACE Transcript Data: CLEP-0004

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours of credit are recommended.

Effective Dates: Prior to July 2001, minimum score 420–500; July 2001–Present, minimum score 50.

Description: The College Mathematics examination covers material generally taught in a college course for non-mathematics majors and majors in other fields not requiring knowledge of advanced mathematics. Nearly half of the test requires candidates to solve routine straightforward problems; the remainder involves solving non-routine problems in which candidates must demonstrate their understanding of concepts. The test includes questions on logic and sets, the real number system, functions and their graphs, probability and statistics, and topics from algebra. It is assumed that candidates are familiar with currently taught mathematics vocabulary, symbols, and notation. The examination places little emphasis on arithmetic calculations, and it does not contain any questions that require the use of a calculator. However, an online scientific calculator (nongraphing) is available to candidates during the examination as part of the testing software. The examination contains 60 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the College Mathematics examination require candidates to demonstrate the following abilities in the approximate proportions indicated.

- Solving routine, straightforward problems (about 50 percent of the examination)
- Solving non-routine problems requiring an understanding of concepts and the application of skills and concepts (about 50 percent of the examination).

The subject matter of the College Mathematics examination is drawn from the following topics:

10% Sets—Union and intersection; Subsets; Venn diagrams; Cartesian product

10% Logic—Truth tables; Conjunctions, disjunctions, implications, and negations; Conditional statements; Necessary and sufficient conditions; Converse, inverse, and contrapositive; Hypotheses, conclusions, and counterexamples

20% Real Number System—Prime and composite numbers; Odd and even numbers; Factors and divisibility; Rational and irrational numbers; Absolute value and order; Binary number system

20% Functions and their Graphs—Domain and range; Linear, polynomial, and composite functions

25% Probability and Statistics—Counting problems, including permutations and combinations; Computation of probabilities of simple and compound events; Simple conditional probability; Mean and median

15% Additional Algebra Topics—Complex numbers; Logarithms and exponentials; Applications.

College Mathematics (new paper-and-pencil version)— ACE Team Recommendation

ACE Transcript Data: CLEP-0004

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours of credit are recommended.

Effective Dates: March 2004–Present, minimum score of 50 (CBT only).

Description: The College Mathematics examination includes material usually found in a college course for non-mathematics majors. Components include:

- Set theory, including set notation, relationships among sets, Venn diagrams and applications, and Cartesian product; logic theory, including truth tables, symbolic logic, conditional statements, logical conclusions, converse, inverse, and contrapositive systems; real number systems, including equations, number theory, including primes, composites, odds and evens, factors and divisibility, and Fundamental Theorem of Arithmetic, rational

and irrational numbers, absolute values, and the Real line

- Functions, including representation by graphic, numeric, symbolic, and verbal means, evaluations of functions, operations with functions (addition, subtraction, and so forth), domain, codomain, and range; simple transformations of functions (horizontal, vertical, and so forth) translations and reflections, and graphs, and inverse functions
- Probability, statistics, and data analysis, including counting (with permutations and combinations), probability, mean, median, mode and range, and standard deviation
- Data interpretation (including use of bar graphs, line graphs, and circle graphs)
- Algebra and geometry topics, including linear, polynomial, and others; systems of linear equations, linear inequalities; Fundamental Theorem of Algebra; Remainder Theorem; Factor Theorem; perimeter and area; triangles, circles, and rectangles; Pythagorean Theorem; Parallel and perpendicular lines.

Skills Measured: The subject matter of the College Mathematics examination is drawn from the following topics:

10% Sets—Union and intersections: subsets, Venn diagrams, Cartesian product

10% Logic—Truth tables; conjunctions, disjunctions, implications, and negations; conditional statements, necessary and sufficient conditions; converse; inverse and contrapositive; hypotheses, conclusions, and counterexamples

20% Real Number System—Prime and composite numbers; factors and divisibility; rational and irrational numbers; absolute value and order; binary number system

20% Functions and their Graphs—Domain and range; linear, polynomial, and composite functions

25% Probability and Statistics—Counting problems, including permutations and combinations; computation of probabilities of simple and compound events; simple conditional probability; mean and median

15% Additional Algebra Topics—Complex numbers; logarithms and exponentials; applications

10% Constructing functions as models and translating ideas among symbolic, graphic, tabular, and verbal representations.

Natural Sciences

ACE Transcript Data: CLEP-0005

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 420–500; July 2001–Present, minimum score 50.

Description: The Natural Sciences examination covers a wide range of topics frequently taught in introductory courses surveying both biological and physical sciences at the freshman or sophomore level. Such courses generally satisfy distribution or general education requirements in science usually neither required of nor taken by science majors. The Natural Sciences examination is not intended for those specializing in science; it is intended to test the understanding of scientific concepts that an adult with a liberal arts education should have. The examination does not stress the retention of factual details; rather, it emphasizes the knowledge and application of the basic principles and concepts of science, the comprehension of scientific information, and the understanding of issues of science in contemporary society. The primary objective of the examination is to give candidates the opportunity to demonstrate a level of knowledge and understanding expected of college students meeting a distribution or general education requirement in the natural sciences. An institution may grant up to six semester hours (or the equivalent) of credit toward fulfillment of such a requirement, for satisfactory scores on the examination. Some may grant specific course credit, on the basis of the total score for a two-semester survey course covering both biological and physical sciences. The examination contains 120 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: The Natural Sciences examination requires candidates to demonstrate one or more of the following abilities in the approximate proportions indicated.

- Knowledge of fundamental facts, concepts, and principles (about 40 percent of the examination)
- Interpretation and comprehension of information (about 20 percent of the examination) presented in the form of graphs, diagrams, tables, equations, or verbal passages

- Qualitative and quantitative application of scientific principles (about 40 percent of the examination), including applications based on material presented in the form of graphs, diagrams, tables, equations, or verbal passages; more emphasis is given to qualitative than quantitative applications.

The subject matter of the Natural Sciences examination is drawn from the following topics:

50% Biological Science—10% Origin and evolution of life, classification of organisms; 10% Cell organization, cell division, chemical nature of the gene, bioenergetics, biosynthesis; 20% Structure, function, and development in organisms; patterns of heredity; 10% Concepts of population biology with emphasis on ecology Physical

50% Science—7% Atomic and nuclear structure and properties, elementary particles, nuclear reactions; 10% Chemical elements, compounds and reactions, molecular structure and bonding; 12% Heat, thermodynamics, and states of matter; classical mechanics; relativity; 4% Electricity and magnetism, waves, light and sound; 7% The universe: galaxies, stars, the solar system; 10% The Earth: atmosphere, hydrosphere, structure features, geologic processes, and history. The examination includes some questions that are interdisciplinary and cannot be classified in one of the above categories. Some of the questions on the examination cover topics that overlap with those listed above, drawing on areas such as history and philosophy of science, scientific methods, science applications and technology, and the relationship of science to contemporary problems of society, such as environmental pollution and depletion of energy. Some questions on the examination are laboratory oriented.

Chemistry

ACE Transcript Data: CLEP-0019

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 47; July 2001–Present, minimum score 50.

Description: The Chemistry examination covers material that is usually taught in a one-year general chemistry course. Understanding of the structure and states of matter, reaction types, equations and stoichiometry, equilibrium, kinetics, thermodynamics, and descriptive and

experimental chemistry is required, as is the ability to interpret and apply this material to new and unfamiliar problems. During this examination, both a calculator function and a periodic table are available to candidates as part of the testing software. The examination contains 80 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the Chemistry examination require candidates to demonstrate one or more of the following abilities:

- Recall remember specific facts; demonstrate straightforward knowledge of information and familiarity with terminology
- Application understand concepts and reformulate information into other equivalent terms; apply knowledge to unfamiliar and/or practical situations; use mathematics to solve chemistry problems
- Interpretation infer and deduce from data available and integrate information to form conclusions; recognize unstated assumptions.

The subject matter of the Chemistry examination is drawn from the following topics:

20% Structure of Matter—Atomic theory and atomic structure; Evidence for the atomic theory; Atomic masses; determination by chemical and physical means; Atomic number and mass number: isotopes and mass spectroscopy; Electron energy levels: atomic spectra, quantum numbers, atomic orbitals; Periodic relationships including, for example, atomic radii, ionization energies, electron affinities, oxidation states; Chemical bonding; Binding forces; Types: covalent, ionic, metallic, macromolecular (or network), van der Waals, hydrogen bonding; Relationships to structure and to properties; Polarity of bonds, electro negativities; Geometry of molecules, ions, and coordination complexes; structural isomerism; dipole moments of molecules; relation of properties to structure; Molecular models; Valence bond theory; hybridization of orbital, resonance, sigma and pi bonds; Other models, for example, molecular orbital; Nuclear chemistry: nuclear equations, half-lives, and radioactivity; chemical applications

19% States of Matter—Gases; Laws of ideal gases: equations of state for an ideal gas;

Kinetic-molecular theory; Interpretation of ideal gas laws on the basis of this theory; The mole concept; Avogadro's number; Dependence of kinetic energy of molecules on temperature; Boltzmann distribution; Deviations from ideal gas laws; Liquids and solids; Liquids and solids from the kinetic-molecular viewpoint; Phase diagrams of one-component systems; Changes of state, critical phenomena; Crystal structure Solutions; Types of solutions and factors affecting solubility; Methods of expressing concentration; Colligative properties, for example; Raoult's law; Effect of interionic attraction on colligative properties and solubility

12% Reaction Types—Formation and cleavage of covalent bonds; Acid-base reactions; concepts of Arrhenius; Brønsted-Lowry, and Lewis; amphoterism; Reactions involving coordination complexes; Precipitation reactions; Oxidation-reduction reactions; Oxidation number; The role of the electron in oxidation-reduction; Electrochemistry; electrolytic cells, standard half-cell potentials, prediction of the direction of redox reactions, effect of concentration changes

10% Equations and Stoichiometry—Ionic and molecular species present in chemical system; net ionic equations; Stoichiometry: mass and volume relations with emphasis on the mole concept; Balancing of equations including those for redox reactions

7% Equilibrium—Concept of dynamic equilibrium, physical and chemical; LeChâtelier's principle; equilibrium constants; Quantitative treatment; Equilibrium constants for gaseous reactions in terms of both molar concentrations and partial pressure (K_c , K_p); Equilibrium constants for reactions in solutions; Constants for acids and bases; pK ; pH ; Solubility product constants and their application to precipitation and the dissolution of slightly soluble compounds; Constants for complex ions; Common ion effect; buffers

4% Kinetics—Concept of rate of reaction; Order of reaction and rate constant: their determination from experimental data; Effect of temperature change on rates; Energy of activation; the role of catalysts; The relationship between the rate determining step and a mechanism

5% Thermodynamics—State functions; First law: heat of formation; heat of reaction; change in enthalpy; Hess' law; heat capacity; heats of vaporization and fusion; Second law: free energy of formation;

free energy of reaction; dependence of change in free energy on enthalpy and entropy changes; Relationship of change in free energy to equilibrium constants and electrode potentials

14% Descriptive Chemistry—The accumulation of certain specific facts of chemistry is essential to enable students to comprehend the development of principles and concepts, to demonstrate applications of principle, to relate fact to theory and properties to structure, and to develop an understanding of systematic nomenclature which facilitates communication. The following areas are normally included on the examination: Chemical reactivity and products of chemical reactions; Relationships in the periodic table: horizontal, vertical, and diagonal; Chemistry of the main groups and transition elements, including typical examples of each; Organic chemistry, including such topics as functional groups and isomerism (may be treated as a separate unit or as exemplary material in other areas, such as bonding)

9% Experimental Chemistry—Some questions are based on laboratory experiments widely performed in general chemistry and ask about the equipment being used, observations made, calculations performed, and interpretation of the results. The questions are designed to provide a measure of students' understanding of the basic tools of chemistry and their applications to simple chemical systems.

Trigonometry

ACE Transcript Data: CLEP-0031

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978-July 2001, minimum score 50; July 2001-Present, minimum score 50.

Description: The Trigonometry examination covers material that is usually taught in a one-semester college course in trigonometry, with primary emphasis on analytical trigonometry. A little more than half of the test is made up of routine problems requiring basic trigonometric skills; the remainder involves solving nonroutine problems in which candidates must demonstrate their understanding of concepts. The test includes questions on trigonometric functions and their relationships, evaluation of trigonometric functions of positive and negative angles, trigonometric equations and inequalities, graphs of trigonometric functions,

trigonometry of the triangle, and miscellaneous other topics. It is assumed that the candidate is familiar with currently taught trigonometric vocabulary and notation and with both radian and degree measure. The test places little emphasis on calculations. A calculator is not permitted on the first part of the test, but an online scientific (non-graphing) calculator will be available to students during the second part of the test. Some questions in the second part do require the use of the calculator. The examination contains 65 questions to be answered in 90 minutes. Part 1 contains 25 questions in 30 minutes and does not allow the use of a calculator. Part 2 contains 40 questions in 60 minutes and requires the use of an online scientific calculator. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the test require candidates to demonstrate the following abilities:

- Solving routine problems involving basic trigonometric skills (about 60 percent of the examination)
- Solving nonroutine problems requiring an understanding of concepts and the application of skills and concepts (about 40 percent of the examination).

The subject matter of the Trigonometry examination is drawn from the following topics:

25% Trigonometric functions and their relationships—Circular or wrapping functions, Determining a function from a given function, Cofunction relationships, Reciprocal relationships, Pythagorean relationships, Functions of two angles, double angles, and half angles, and Identities

15% Evaluation of trigonometric functions of angles

10% Trigonometric equations and inequalities

15% Interpreting graphs of trigonometric functions

15% Trigonometry of the triangle including the law of sines and the law of cosines

20% Miscellaneous: Inverse functions (arcsin, arccos, arctan); Polar coordinates.

BUSINESS

Principles of Accounting

ACE Transcript Data: CLEP-0034

Credit Recommendation: At the baccalaureate/associate degree level, 6 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 45; July 2001–Present, minimum score 50.

Description: The Principles of Accounting examination covers the information and skills taught in two semesters (or the equivalent) of college-level accounting. The emphasis of the exam is on financial and managerial accounting. Colleges may award credit for a one- or two-semester course in financial accounting including some managerial accounting topics, or for one semester of financial accounting and one semester of managerial accounting. The examination contains 78 questions to be answered in 90 minutes. Any time candidates spend on tutorials or providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the Principles of Accounting examination require candidates to demonstrate one or more of the following abilities.

- Familiarity with accounting concepts and terminology
- Preparation, use, and analysis of accounting data and financial reports issued for both internal and external purposes
- Application of accounting techniques to simple problem situations involving computations
- Understanding the rationale for generally accepted accounting principles and procedures

The subject matter of the Principles of Accounting examination is drawn from the following topics:

60-70% Financial accounting (concerned with providing financial statements and reports of interest to company managers as well as bankers, investors, and other outsiders who must make financial assessment of a company)—Generally accepted accounting principles; Rules of double-entry accounting; The accounting cycle; Presentation of and relationships between general-purpose financial statements; Valuation of accounts and notes receivable; Valuation of inventories; Initial costs of plant assets; Depreciation; Liabilities; Investments; Capital; Cash and stock dividends; Treasury stock; Purchase and sale of merchandise; Revenue and cost apportionments; Cash control; Division of profits and losses in partnership accounting; Cash flow analysis

30-40% Managerial accounting (concerned with the use of accounting data for internal purposes to help management in planning and controlling functions in a company)—Analysis of departmental operations; Budgeting;

Cost-volume profit (break-even) analysis; Direct costing and absorption costing; Financial statement analysis; Performance evaluation; Process and job-order systems; Standard costs and variances; The manufacturing environment; Use of differential (relevant) cost.

Introductory Business Law

ACE Transcript Data: CLEP-0025

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 51; July 2001–Present, minimum score 50.

Description: The Introductory Business Law examination covers material that is usually taught in an introductory one-semester college course in the subject. The examination places major emphasis on understanding the functions of contracts in American business law, but also includes questions on the history and sources of American law, legal systems and procedures, agency and employment, sales, and other topics. The examination contains 100 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials or providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the test require candidates to demonstrate one or more of the following abilities.

- Knowledge of the basic facts and terms (about 30–35 percent of the examination)
- Understanding of concepts and principles (about 30–35 percent of the examination)
- Ability to apply knowledge to specific case problems (about 30 percent of the examination) The subject matter of the Introductory Business Law examination is drawn from the following topics:

5-10% History and sources of American Law/Constitutional Law

5-10% American legal systems and procedures

25-30% Contracts—Meaning of terms; Formation of contracts; Capacity; Consideration; Joint obligations; Contracts for the benefit of third parties; Assignment/delegation; Statute of frauds; Scope and meaning of contracts; Breach of contract and remedies; Bar to remedies for breach of contract; Discharge of contracts; Illegal contracts; Other

25-30% Legal Environment—Ethics; Social responsibility of corporations; Govern-

ment regulation/administrative agencies; Environmental law; Securities and antitrust law; Employment law; Creditors' rights; Product liability; Consumer protection; International business law

10-15% Torts

5-10% Miscellaneous—Agency, partnerships, and corporations; Sales.

Information Systems and Computer Applications

ACE Transcript Data: CLEP-0022

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 52; July 2001–Present, minimum score 50.

Description: The Information Systems and Computer Applications examination covers material that is usually taught in an introductory college-level business course. Questions on the examination are about equally divided between those testing knowledge, terminology, and basic concepts and those asking students to apply that knowledge. Although the examination assumes a general familiarity with information systems and computer applications, it does not emphasize the details of hardware design, language-specific programming techniques, or specific application packages. There are occasional references to applications such as word processing, spreadsheets, and data management, but questions that involve these applications do not draw heavily on knowledge of a specific product. Rather, the focus is on concepts and techniques applicable to a variety of products and environments. The examination contains 100 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: The subject matter of the Information Systems and Computer Applications examination is drawn from the following topics:

20% Computer/Telecommunications Hardware and Hardware Functions—Devices for processing, storage, data entry, telecommunications, network, and output; Functions performed by computer, telecommunications, and network hardware; Digital representation of data for storage and processing (numeric, text, pictures, graphs, and motion video); Concepts of local and wide-area network architectures; Concept of mainframe vs. client/server architectures

15% Computer Software/Programming—

Operating systems and network management systems; Software development methods and tools; Programming languages; User interfaces (graphical and multimedia); Software packages

10% Data Management—Data concepts and data structures; Database management systems; Hypertext and hypermedia; Document images

20% Information Processing Management—System development processes and tools; Types of information processing applications (batch, real-time, transaction); System, application, and personal computer security and controls; Information processing careers; Information processing standards

30% Information Technology Applications in Organizations—Analysis, decision support, and expert systems; User applications (word processing, spreadsheets, presentations); Office systems (electronic mail, fax, conferencing, cooperative work); Internet and other online services and methods (World Wide Web, File Transfer Protocol, Gopher, Electronic Data Interchange)

5% Social/Ethical Implications and Issues—Economic effects; Privacy concerns; Intellectual property rights and legal issues; Effects of information technology on jobs (ergonomics and job design).

Principles of Management

ACE Transcript Data: CLEP-0028

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 46; July 2001–Present, minimum score 50.

Description: The Principles of Management examination covers material that is usually taught in an introductory course in the essentials of management and organization. The fact that such courses are offered by different types of institutions and in a number of fields other than business has been taken into account in the preparation of this examination. This examination requires a knowledge of human resources and operational and functional aspects of management. The examination contains 100 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: Questions on the Principles of Management examination require candidates to demonstrate one or more of the following abilities in the approximate proportions indicated.

- Specific factual knowledge, recall, and general understanding of purposes, functions, and techniques of management (about 10 percent of the exam)
- Understanding of and ability to associate the meaning of specific terminology with important management ideas, processes, techniques, concepts, and elements (about 40 percent of the exam)
- Understanding of theory and significant underlying assumptions, concepts, and limitations of management data, including a comprehension of the rationale of procedures, methods, and analyses (about 40 percent of the exam)
- Application of knowledge, general concepts, and principles to specific problems (about 10 percent of the exam)

The subject matter of the Principles of Management examination is drawn from the following topics. The percentages next to the main topics indicate the approximate percentage of examination questions on that topic.

20% Organization and Human Resources—Personnel administration; Collective bargaining; Human relations and motivation; Training and development; Performance appraisal; Organizational development; Effective communication; Legal concerns; Workforce diversity

15% Operational Aspects of Management—Operations planning and control; Work scheduling; Quality management (e.g., TQM); Information processing and management; Strategic planning and analysis; Productivity

50% Functional Aspects of Management Planning—Planning; Organizing; Directing; Controlling; Authority; Decision making; Organization charts; Leadership; Organizational structure; Budgeting; Communication; Problem solving; Group dynamics; conflict resolution; Effective communication; Change; Organizational theory

15% Miscellaneous Aspects of Management—Historical aspects; Social responsibilities of business; Systems; International management and competition; Environment; Ethics; Government regulation; Management theory and theorists.

Principles of Marketing

ACE Transcript Data: CLEP-0029

Credit Recommendation: At the baccalaureate/associate degree level, 3 semester hours of credit are recommended.

Effective Dates: January 1978–July 2001, minimum score 50; July 2001–Present, minimum score 50.

Description: The Principles of Marketing examination covers the material that is usually taught in a one-semester introductory course in marketing. Such a course is usually known as Basic Marketing, Introduction to Marketing, Fundamentals of Marketing, Marketing, or Marketing Principles. The exam is concerned with the role of marketing in society and within a firm, understanding consumer and organizational markets, marketing strategy planning, the marketing mix, marketing institutions, and other selected topics such as international marketing, ethics, marketing research, services and not-for-profit marketing. The candidate is also expected to have a basic knowledge of the economic/demographic, social/cultural, political/legal, and technological trends that are important to marketing. The examination contains 100 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Skills Measured: The subject matter of the Principles of Marketing examination is drawn from the following topics:

7-12% Role of Marketing in Society—History; Economy; Ethics; Non-profit marketing; International marketing

10-15% Role of Marketing in a Firm—Marketing concept; Planning and strategy; Marketing environment; Research; Competitive; Economic; Political/legal; Sociocultural; Technological

25-30% Target Markets—Consumer behavior/demographics; Demand estimation and forecasting; Segmentation; Positioning; Business-to-business markets

45-55% Marketing Mix—Product and service management; Pricing policies; Distribution/logistics; Promotion; Mass mediated; Personal selling; Public relations; Sales promotion; Direct marketing; Internet Market

Summary of Credit Recommendations for the CLEP Examinations

	Paper & Pencil Testing through June 2001		Computer Based Testing (CBT) beginning July 2001		Paper & Pencil and Computer Based Testing (CBT) beginning March 2004	
	ACE Recommended Score ¹	Semester Hours	ACE Recommended Score ¹	Semester Hours	ACE Recommended Score ¹	Semester Hours
COMPOSITION AND LITERATURE						
American Literature	46	6	50	6		
Analyzing and Interpreting Literature	47	6	50	6	50	6
Composition, Freshman College	44	6	50	6	50	6
English Composition with or without Essay ²	420-500	6	50	6	50	6
English Literature	46	6	50	6		
Humanities	420-500	6	50	6	50	6
FOREIGN LANGUAGES						
French - College Level 1 (two semesters)	42	6	50	6		
French - College Level 2 (four semesters)	45	12	62	12		
German - College Level 1 (two semesters)	36	6	50	6		
German - College Level 2 (four semesters)	42	12	63	12		
Spanish - College Level 1 (two semesters)	45	6	50	6		
Spanish - College Level 2 (four semesters)	50	12	66	12		
SOCIAL SCIENCES AND HISTORY						
American Government	47	3	50	3		
Educational Psychology, Introduction to	47	3	50	3		
History of the United States I	47	3	50	3	50	3
History of the United States II	46	3	50	3	50	3
Human Growth and Development	45	3	50	3		
Macroeconomics, Principles of	44	3	50	3		
Microeconomics, Principles of	41	3	50	3		
Psychology, Introductory	47	3	50	3	50	3
Social Sciences and History	420-500	6	50	6	50	6
Sociology, Introductory	47	3	50	3	50	3
Western Civilization I	46	3	50	3		
Western Civilization II	47	3	50	3		
SCIENCE AND MATHEMATICS						
Algebra, College	46	3	50	3	50	3
Algebra - Trigonometry, College	45	3	50	3		
Biology	46	6	50	6		
Calculus	41	6	50	3		
Chemistry	47	6	50	6		
Mathematics, College	420-500	6	50	6	50	6
Natural Sciences	420-500	6	50	6		
Precalculus					50	3
Trigonometry	50	3	50	3		

Summary of Credit Recommendations for the CLEP Examinations (continued)

	Paper & Pencil Testing through June 2001		Computer Based Testing (CBT) beginning July 2001		Paper & Pencil and Computer Based Testing (CBT) beginning March 2004	
	ACE Recommended Score ¹	Semester Hours	ACE Recommended Score ¹	Semester Hours	ACE Recommended Score ¹	Semester Hours
BUSINESS						
Accounting, Principles of	45	6	50	6		
Business Law, Introductory	51	3	50	3		
Information Systems and Computer Applications	52	3	50	3	50	3
Management, Principles of	46	3	50	3	50	3
Marketing, Principles of	50	3	50	3	50	3

¹ Represents the mean test score of students who participated in a national norming study and have earned a grade of C in the respective course.

² Note: For English Composition exams taken between 1978 and April 1986, the minimum score for awarding credit was 530 and above.

NOTE: Minimum scores for CLEP General Exams prior to July 1, 1993 were 421–500. After this date, all scaled scores end in zero.

Recommendations for Minimum Scores for Awarding Credit on CLEP Subject Examinations No Longer in Use

Test Title	Administered Before	Minimum Scores for Awarding Credit	Number of Semester Hours
Accounting, Introductory	January 1977	50	6
Afro-American History	September 1983	49	3
American Education, History of	September 1981	46	3
American History	September 1982	46	6
Biology	January 1978	49	6
Business Management, Introduction to	January 1980	47	3
Calculus, Introductory	January 1975	48	6
Calculus with Analytic Geometry	January 1978	47	6
Calculus with Elementary Functions	January 1996	47	6
Chemistry, General	April 1979	48	6
College Algebra	March 1980	50	3
College Algebra	January 1996	45	3
College Algebra-Trigonometry	March 1980	49	3
College Composition	July 1995	47	6
College French	June 1990		
Two Semesters		41	6
Four Semesters		53	12
College German Levels 1 and 2	January 1996		
Two Semesters		40	6
One Semester		48	12
Computers and Data Processing	January 1980	46	3
Computers and Data Processing	June 1990	47	3
Computer Programming			
Elementary—Fortran IV	September 1983	48	3
Economics, Introductory	January 1975	48	6
Educational Psychology	April 1979	47	3
Educational Psychology	September 1990	46	3
English Composition (Rhetoric)	October 1976	48	6
Freshman English	July 1995	47	6
Geology	July 1977	49	6
Human Growth and Development	January 1978	47	3
Macroeconomics, Introductory	July 1995	48	3
Management, Introduction to	July 1995	47	3
Marketing, Introductory	January 1995	48	3
Medical Technology			
Clinical Chemistry	September 1983	47	*
Hematology	September 1983	46	*
Immunohematology	September 1983	47	*

* These examinations are based on subject matter covered during the clinical year of training of medical technology students.

Recommendations for Minimum Scores for Awarding Credit on CLEP Subject Examinations No Longer in Use

(continued)

Test Title	Administered Before	Minimum Scores for Awarding Credit	Number of Semester Hours
Microbiology	September 1983	48	3
Microeconomics, Introductory	July 1995	41	3
Micro- and Macroeconomics, Introductory	September 1983	47	3
Money and Banking	February 1983	48	3
Nursing			
Anatomy, Physiology, Microbiology	September 1983	44	#
Behavioral Sciences for Nurses	September 1983	45	#
Fundamentals of Nursing	September 1983	44	#
Medical-Surgical Nursing	September 1983	46	#
Sociology, Introductory	January 1975	46	3
Statistics	November 1970	48	3
Statistics	May 1986	49	3
Tests and Measurements	September 1981	46	3
Western Civilization	September 1981	50	6

Examinations are based on subject matter covered during the first year of a two-year associate degree program in nursing.