



# El Camino College

## COURSE OUTLINE OF RECORD - Approved

### I. GENERAL COURSE INFORMATION

**Subject and Number:** English 1A  
**Descriptive Title:** Reading and Composition

**Course Disciplines:** English

**Division:** Humanities

**Catalog Description:** This course is designed to strengthen the students' ability to read with understanding and discernment, to discuss assigned readings intelligently, and to write clearly. Emphasis will be placed on the ability to write an essay in which each paragraph relates to a controlling idea, has an introduction and conclusion, and contains primary and secondary support. College-level reading material will be assigned to provide the stimulus for class discussion and writing assignments, including a required research paper.

**Conditions of Enrollment: Prerequisite**

credit in  
 English A  
 AND

credit in  
 English 84 or

English as a Second Language 53C  
 with a minimum grade of C

AND

English as a Second Language 52B  
 with a minimum grade of C

or

qualification by testing (English or ESL Placement Test) and  
 assessment

**Course Length:**  Full Term  Other (Specify number of weeks):  
**Hours Lecture:** 4.00 hours per week  TBA  
**Hours Laboratory:** 0 hours per week  TBA  
**Course Units:** 4.00

**Grading Method:** Letter  
**Credit Status:** Associate Degree Credit

**Transfer CSU:**  **Effective Date: Prior to July 1992**  
**Transfer UC:**  **Effective Date: Prior to July 1992**

**General Education:**

**EI Camino College:** 4A – Language and Rationality – English Composition  
 Term: \_\_\_\_\_ Other: \_\_\_\_\_

---

**CSU GE:** A2 - Written Communication  
 Term: \_\_\_\_\_ Other: Approved

---

**IGETC:** 1A - English Composition  
 Term: Fall 1991 Other: \_\_\_\_\_

---

## II. OUTCOMES AND OBJECTIVES

### A. COURSE STUDENT LEARNING OUTCOMES (The course student learning outcomes are listed below, along with a representative assessment method for each. Student learning outcomes are not subject to review, revision or approval by the College Curriculum Committee)

Given an out-of-class writing task in which students find multiple sources related to a particular topic, students will write a research report, which shows the ability to support a thesis using analysis, to synthesize and integrate materials effectively

1. from a variety of sources, and to cite sources in MLA format (including a works cited page). The report is organized, technically correct in paragraph composition, sentence structure, grammar, spelling and word use, and demonstrates thoughtful treatment of the topic.

The above SLOs were the most recent available SLOs at the time of course review. For the most current SLO statements, visit the El Camino College SLO webpage at <http://www.elcamino.edu/academics/slo/>.

### B. Course Student Learning Objectives (The major learning objective for students enrolled in this course are listed below, along with a representative assessment method for each)

1. Recognize and revise sentence-level grammar and usage errors.  
 Term or other papers
2. Read and apply critical-thinking skills to numerous published articles and to college-level, book-length works for the purpose of writing and discussion.  
 Term or other papers
3. Apply appropriate strategies in the writing process including prewriting, composing, revising, and editing techniques.  
 Term or other papers
4. Compose multi-paragraph, thesis-driven essays with logical and appropriate

supporting ideas, and with unity and coherence.

Term or other papers

5. Demonstrate ability to locate and utilize a variety of academic databases, peer-reviewed journals, and scholarly websites.

Term or other papers

6. Utilize MLA guidelines to format essays, cite sources in the texts of essays, and compile Works Cited lists.

Term or other papers

**III. OUTLINE OF SUBJECT MATTER (Topics are detailed enough to enable a qualified instructor to determine the major areas that should be covered as well as ensure consistency from instructor to instructor and semester to semester.)**

| Lecture or Lab | Approximate Hours | Topic Number | Major Topic  |
|----------------|-------------------|--------------|--|
| Lecture        | 4                 | I            | Review of the writing process<br>A. Prewriting<br>B. Drafting<br>C. Revision<br>D. General essay structure<br>1. Introduction<br>2. Thesis statement<br>3. Body paragraphs<br>4. Conclusion  |
| Lecture        | 6                 | II           | Review of grammar and mechanics  |
| Lecture        | 4                 | III          | Review of MLA-style documentation<br>A. In-text citation formatting<br>B. Works Cited formatting   |
| Lecture        | 10                | IV           | Application of critical reading skills<br>A. Identifying thesis and support<br>B. Identifying central themes and ideas<br>C. Distinguishing fact from opinion<br>D. Evaluating information, advocating/challenging an author's opinions, judging the aesthetic value of a work and/or its constituent parts (such as plot, characters, settings, themes) |
| Lecture        | 8                 | V            | Review and application of prewriting strategies for student essays, including brainstorming, listing, outlining, and free-writing/journal entry/in-class writing based on reading assignments  |
| Lecture        | 8                 | VI           | Review and application of rhetorical strategies for responding to reading assignments in student essays (such as cause/effect, comparison/contrast, argumentation)   |

|         |    |      |   |
|---------|----|------|---|
| Lecture | 4  | VII  | <p>Review of paraphrasing strategies</p> <ul style="list-style-type: none"> <li>A. Incorporating material from reading assignment into text of student essay</li> <li>B. Paraphrasing and summarizing</li> <li>C. Quoting directly/indirectly</li> <li>D. Avoiding plagiarism</li> </ul>  |
| Lecture | 10 | VIII | <p>Essay revision</p> <ul style="list-style-type: none"> <li>A. Review of essay revision methods <ul style="list-style-type: none"> <li>1. Evaluating content, coherence, proper documentation, and mechanics</li> <li>2. Making appropriate corrections based on completed evaluation</li> </ul> </li> <li>B. Application of essay revision techniques: multiple revision at various stages of the writing process in response to peer or instructor feedback</li> </ul>   |
| Lecture | 8  | IX   | <p>Research paper writing: Source materials and their incorporation</p> <ul style="list-style-type: none"> <li>A. Library and/or Internet research orientation for research paper</li> <li>B. Source evaluation and collection for research paper: criteria for appropriate sources and review of primary vs. secondary sources</li> <li>C. Organization of source materials for research paper: note cards and annotated bibliographies</li> </ul>   |
| Lecture | 10 | X    | <p>Research paper writing: Utilizing the writing process</p> <ul style="list-style-type: none"> <li>A. General research paper structure, drafting of formal topic statement/preliminary research plan</li> <li>B. Outlining, discussion of rhetorical formats for various types of research papers (such as problem/solution and history/biography)</li> <li>C. Drafting of research paper: integration of source material into general text of research paper</li> <li>D. Revision techniques for research paper: evaluation of content, coherence, proper documentation, and mechanics</li> <li>E. Application of research paper revision techniques: multiple revisions at various stages of the writing process in response to peer or instructor feedback</li> </ul> |
| Lecture | 0  | XI   | <p>Students will write about 32 pages (8,000 words) in all, usually divided among six to eight papers. Revisions should be emphasized, so pages written during preliminary drafting and revising will be counted toward the 32-page total, but not as separate papers. Diagnostic essays, essay exams, and annotated bibliographies may be counted as papers. Reaction papers and portfolio revisions may also be counted toward the 32-page requirement. Journal writing, if the writing served as preparatory writing or provided assignments that constitute the building of thought and/or help generate ideas for the</p>  |

|                               |    |  |
|-------------------------------|----|--|
|                               |    | formal papers, may also be counted. One of the papers must be a research paper. Readings should be substantive, published materials of both literary and non-literary character, including expository or argumentative texts chosen to spark critical thinking and model the elaboration of complex critical arguments, as well as to facilitate student writing projects. |
|                               |    | test test  |
| <b>Total Lecture Hours</b>    | 72 |  |
| <b>Total Laboratory Hours</b> | 0  |  |
| <b>Total Hours</b>            | 72 |  |

#### IV. PRIMARY METHOD OF EVALUATION AND SAMPLE ASSIGNMENTS

##### A. PRIMARY METHOD OF EVALUATION:

Substantial writing assignments

##### B. TYPICAL ASSIGNMENT USING PRIMARY METHOD OF EVALUATION:

Use the critical-thinking skills you have learned in class to write an essay of three to five pages (750-1,250 words) analyzing, evaluating, and responding to the thesis and supporting evidence of one essay we've read and discussed in class. You may use any of our course readings or other appropriate sources to support your position.

##### C. COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:

1.

Compose an argumentative research essay with a thesis that is specific, manageable, provable, and contestable. You should analyze and prove your thesis using paraphrases and quotations from at least five sources. The sources should come from ECC library databases, books, and/or credible websites. You must sustain your argument, use transitions effectively, and use correct grammar, spelling, and punctuation. This essay will be approximately 5-7 pages in length, and you must use MLA format, including in-text citations and a Works Cited page.

2. Analyze in a 3- to 4-page written essay the thesis and supporting evidence in Robert Heilbroner's "Don't Let Stereotypes Warp Your Judgment," and evaluate whether his perception that the practice of stereotyping can be reduced through individual effort is valid or invalid. Analyze and evaluate the portions of Heilbroner's text that you incorporate into your essay.

**D. OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:**

Essay exams

Quizzes

Written homework

Term or other papers

Other (specify):

Reading journals, annotated bibliographies

Socratic discussions

**V. INSTRUCTIONAL METHODS**

Discussion

Group Activities

Lecture

Multimedia presentations

Other (please specify)

Computer classroom

**Note: In compliance with Board Policies 1600 and 3410, Title 5 California Code of Regulations, the Rehabilitation Act of 1973, and Sections 504 and 508 of the Americans with Disabilities Act, instruction delivery shall provide access, full inclusion, and effective communication for students with disabilities.**

**VI. WORK OUTSIDE OF CLASS**

Study

Required reading

Written work

Other (specify)

Compilation of source materials for research paper

**Estimated Independent Study Hours per Week: 8**

**VII. TEXTS AND MATERIALS****A. UP-TO-DATE REPRESENTATIVE TEXTBOOKS**

Susan Bachmann and Melinda Barth. Between Worlds, A Reader, Rhetoric, and Handbook. 7th ed. Longman, 2011.

Hacker. Rules for Writers. 7th ed. Bedford/St. Martin's, 2012.

**B. ALTERNATIVE TEXTBOOKS**

**C. REQUIRED SUPPLEMENTARY READINGS**

Twilight: Los Angeles , 1992. Anna Deavere Smith. First Anchor Books. 1994.  
 Outliers. Malcolm Gladwell. Little, Brown and Company. 2008.  
 Drown. Junot Diaz. Riverhead Books. 1996.  
 Fast Food Nation. Eric Schlosser. First Mariner Books. 2012.  
 The Unthinkable: Who Survives When Disaster Strikes--and Why. Amanda Ripley.  
 Crown Publishing. 2008.  
 Alive. Piers Paul Read. Harper Perrenial. 2005.

**D. OTHER REQUIRED MATERIALS****VIII. CONDITIONS OF ENROLLMENT****A. Requisites (Course and Non-Course Prerequisites and Corequisites)**

| <b>Requisites</b>   | <b>Category and Justification</b> |
|---|-----------------------------------|
| Course Prerequisite<br>English-A AND                        | Sequential                        |
| Course Prerequisite<br>English-84 or                        | Sequential                        |
| Course Prerequisite<br>English as a Second Language-53C AND | Sequential                        |
| Course Prerequisite<br>English as a Second Language-52B or  | Sequential                        |
| Non-Course Prerequisite                                     |                                   |

**B. Requisite Skills**

| <b>Requisite Skills</b>  |
|--|
| <p>Identify an implied main idea (thesis), and support with major and minor details, from a longer text or novel. ENGL 84 -</p> <p>Identify an implied main idea (thesis), and support with major and minor details, from a longer text or novel.<br/>           ESL 52B -</p> <p>Predict outcomes, interpret events, identify and restate main ideas, and draw inferences in various readings of intermediate difficulty.</p>   |
| <p>Apply appropriate strategies in the writing process including prewriting, composing, revising, and editing techniques. ENGL A - Apply appropriate strategies in the writing process including prewriting, composing, revising, and editing techniques.ESL 53C -</p> <p>Apply appropriate strategies in the writing process including prewriting, composing, revising, and editing techniques.</p>   |
| <p>Plan, write, and revise 500-word multi-paragraph expository essays including an introduction and conclusion, exhibiting coherence and unity, avoiding major grammatical and mechanical errors that interfere with meaning, and demonstrating awareness of audience, purpose, and language choice.<br/>           ENGL A - Plan, write, and revise 500-word multi-paragraph expository essays including an introduction and conclusion, exhibiting coherence and unity, avoiding major grammatical and mechanical errors that interfere with meaning, and demonstrating awareness of audience, purpose, and language choice.ESL 53C -</p> <p>Plan, write, and revise 500-word multi-paragraph expository essays that include both an introduction and conclusion, and which exhibit coherence and unity; avoid major grammatical and mechanical errors that interfere with meaning; and demonstrate awareness of cultural context, audience, purpose, and language choice.<br/>           ENGL A - Utilize MLA guidelines to format a document, to cite sources in the text of an essay, and to compile a Works Cited list.ESL 53C -</p> <p>Apply MLA guidelines to format a document, to cite sources in the text of an essay, and to</p> |

|                             |
|-----------------------------|
| compile a Works Cited list. |
|-----------------------------|

**C. Recommended Preparations (Course and Non-Course)**

| Recommended Preparation | Category and Justification |
|-------------------------|----------------------------|
|-------------------------|----------------------------|

**D. Recommended Skills**

| Recommended Skills |
|--------------------|
|--------------------|

**E. Enrollment Limitations**

| Enrollment Limitations and Category | Enrollment Limitations Impact |
|-------------------------------------|-------------------------------|
|-------------------------------------|-------------------------------|

**Course created by English 1A Committee on 02/01/1960.**

**BOARD APPROVAL DATE:**

**Last Reviewed and/or Revised by Allison Carr on 10/25/2013**

18397



# El Camino College

## COURSE OUTLINE OF RECORD - Approved

### I. GENERAL COURSE INFORMATION

**Subject and Number:** Journalism 12  
**Descriptive Title:** Mass Media and Society

**Course Disciplines:** Journalism  
 or English

**Division:** Humanities

**Catalog Description:** This course examines the past and current influences on American society of books, newspapers, magazines, movies, radio, television, recordings, and the World Wide Web. With a focus on critical thinking skills, students gain experience in reading and writing persuasive and argumentative essays about problems facing the mass media. Students also learn the history of the eight mass media as well as analyze and evaluate the functions, the responsibilities, the regulations, and the ethics involved in the mass media industry.

**Conditions of Enrollment:** Recommended Preparation  
 Eligibility for English 1A

**Course Length:**  Full Term  Other (Specify number of weeks):  
**Hours Lecture:** 3.00 hours per week  TBA  
**Hours Laboratory:** 0 hours per week  TBA  
**Course Units:** 3.00

**Grading Method:** Letter  
**Credit Status:** Associate Degree Credit

**Transfer CSU:**  Effective Date: Prior to July 1992  
**Transfer UC:**  Effective Date: Prior to July 1992

**General Education:**  
**El Camino College:** 2C – Social and Behavioral Sciences – General  
 Term: Other:

**4B – Language and Rationality – Communication and Analytical Thinking**

Term:

Other:

**CSU GE:****D7 - Interdisciplinary Social and Behavioral Science**

Term: Fall 2008

Other:

**IGETC:****4G - Interdisciplinary, Social & Behavioral Sciences**

Term: Fall 2008

Other:

**II. OUTCOMES AND OBJECTIVES****A. COURSE STUDENT LEARNING OUTCOMES (The course student learning outcomes are listed below, along with a representative assessment method for each. Student learning outcomes are not subject to review, revision or approval by the College Curriculum Committee)**

Students will be able to correctly identify the eight mass media serving the country.

1. The eight mass media are: Books, newspapers, magazines, sound recordings, film, radio, television and the Internet.

The above SLOs were the most recent available SLOs at the time of course review. For the most current SLO statements, visit the El Camino College SLO webpage at <http://www.elcamino.edu/academics/slo/>.

**B. Course Student Learning Objectives (The major learning objective for students enrolled in this course are listed below, along with a representative assessment method for each)**

1. Identify the eight mass media in American society.

Essay exams

2. Summarize the history of each of the eight mass media.

Essay exams

3. Analyze and evaluate the major theories on how the mass media influence society.

Essay exams

4. Examine and assess the role advertising plays in the mass media.

Written homework

5. Appraise and measure the ethics and the laws governing the mass media in American Society

Written homework

6. Distinguish the differences among and the benefits of the mass media.

Written homework

7. Analyze and evaluate the role of the government in American mass media.

Written homework

8. Categorize and estimate the role of public relations specialists, advocacy groups, talk radio hosts, the nightly news, and the World Wide Web in the mass media.

Term or other papers

9. Distinguish the four major diversity groups and the role each plays in the mass media.

Term or other papers

10. Analyze and evaluate how the mass media have changed American society over the years and the role they play in defining and shaping our culture.

Term or other papers

11. Analyze and evaluate the impact each of the mass media has had on American culture, dress, politics, law, morals, and government.

Term or other papers

12. Compare and contrast the extent and type of influence of each of the mass media on American Society.

Term or other papers

**III. OUTLINE OF SUBJECT MATTER (Topics are detailed enough to enable a qualified instructor to determine the major areas that should be covered as well as ensure consistency from instructor to instructor and semester to semester.)**

| Lecture or Lab | Approximate Hours | Topic Number | Major Topic  |
|----------------|-------------------|--------------|--|
| Lecture        | 27                | I            | History of the Mass Media<br>A. The eight mass media and the history of each<br>B. Evolution of each of the mass media<br>C. Problems related to each of the mass media, how each has influenced society and why<br>D. The mass media's impact on education, religion, morality, materialism, reasoning, children, the family, people of color, women and men, and the aged<br>E. Mass media laws and ethics   |
| Lecture        | 6                 | II           | Mass Media Effects and Influence on Society<br>A. Major theories of how the mass media influence society, including powerful effects, third-person, and future theories<br>B. Mass media uses and influences including gratification studies, surveillance function, individual selectivity, and socialization<br>C. Media-depicted violence and its impact on society, including media violence as a negative and as a positive influence<br>D. Marshall McLuhan and his influence on mass media effect theories<br>E. Social stability, media-induced ritual, media and the status quo, media and cognitive dissonance<br>F. Historical transmission and contemporary transmission |

|                               |   |     |   |
|-------------------------------|---|-----|---|
| Lecture                       | 8 | III | <p>Advertising and Public Relations</p> <ul style="list-style-type: none"> <li>A. Advertising in a democracy, its origins and the various types of advertising</li> <li>B. Advertising theories, including branding, lowest common denominator, marketing</li> <li>C. Advertising regulation and government control</li> <li>D. Public relations, including public relations agencies and how they work with media representatives</li> <li>E. Standards and ethics of public relations experts</li> </ul>  |
| Lecture                       | 6 | IV  | <p>Mass Media and Its Impact on Society</p> <ul style="list-style-type: none"> <li>A. Journalism traditions, including the Colonial Period, Penny Press Period, and Yellow Journalism</li> <li>B. The role of the journalist and his/her personal views, bias</li> <li>C. Variables affecting news coverage, including news holes, competition, and availability of stories.</li> <li>D. Gatekeeping in the news business</li> <li>E. Journalistic trends, including exploratory reporting and soft news</li> <li>F. Identifying good journalism</li> </ul> |
| Lecture                       | 3 | V   | <p>Diversity in the Mass Media</p> <ul style="list-style-type: none"> <li>A. Major people of color groups: African American, Latino, Asian, and Native American</li> <li>B. Appearance and portrayal of minorities in the mass media</li> <li>C. Stereotypes used for each of these four groups and why these groups are stereotyped by the mass media</li> <li>D. The harm in relying on stereotypes to convey a mass media message</li> </ul>   |
| Lecture                       | 2 | VI  | <p>Preparing to Write the Research Paper</p> <ul style="list-style-type: none"> <li>A. Review of guidelines on how to write a research paper, including paper length, introduction, body, conclusion, works cited, and parenthetical references</li> <li>B. Analysis and evaluation of previous research papers</li> </ul>  |
| Lecture                       | 2 | VII | Final Exam  |
| <b>Total Lecture Hours</b>    |   | 54  |   |
| <b>Total Laboratory Hours</b> |   | 0   |   |
| <b>Total Hours</b>            |   | 54  |   |

#### IV. PRIMARY METHOD OF EVALUATION AND SAMPLE ASSIGNMENTS

**A. PRIMARY METHOD OF EVALUATION:**

Substantial writing assignments

**B. TYPICAL ASSIGNMENT USING PRIMARY METHOD OF EVALUATION:**

Analyze an entire three-hour block of prime time television on a major network, including commercials, and count the number of times people of color appear during this time period. Evaluate whether the people of color on TV are shown in a stereotypical manner, in a mostly positive manner, and/or in a mostly negative manner. Compare their exposure and their portrayals to the dominant culture shown during this time period. Based upon this exercise, write an analytical paper discussing whether or not the mass media portray people of color in a fair, balanced, and non-stereotypical manner.

**C. COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:**

1. Listen to one hour of a radio program. In a two-to-three page written essay, analyze the content of the station via the music played, the advertisements, and the host to determine the audience of this station. Provide the demographics of the typical listener for this station, including age group, income, race, gender and education level. Evaluate whether or not this station serves a purpose in the Los Angeles County market.
2. Record and watch one hour of music television videos. In a two-to-three page written essay, analyze the content of the music videos being played to discover how women are portrayed in these videos. Count the numbers of times women are shown in the videos, and analyze how the women in these videos are portrayed. Discuss why women are portrayed in this manner, and evaluate whether this is a positive or a negative influence on young girls and teenagers.

**D. OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:**

Essay exams

Written homework

Term or other papers

Multiple Choice

Completion

True/False

**V. INSTRUCTIONAL METHODS**

Discussion  
 Group Activities  
 Guest Speakers  
 Lecture  
 Multimedia presentations

**Note: In compliance with Board Policies 1600 and 3410, Title 5 California Code of Regulations, the Rehabilitation Act of 1973, and Sections 504 and 508 of the Americans with Disabilities Act, instruction delivery shall provide access, full inclusion, and effective communication for students with disabilities.**

## VI. WORK OUTSIDE OF CLASS

Study  
 Answer questions  
 Required reading  
 Written work

**Estimated Independent Study Hours per Week: 6**

## VII. TEXTS AND MATERIALS

### A. UP-TO-DATE REPRESENTATIVE TEXTBOOKS

Vivian, John. The Media of Mass Communication. 11th ed. Pearson, Allyn and Bacon, 2012.

### B. ALTERNATIVE TEXTBOOKS

### C. REQUIRED SUPPLEMENTARY READINGS

### D. OTHER REQUIRED MATERIALS

## VIII. CONDITIONS OF ENROLLMENT

### A. Requisites (Course and Non-Course Prerequisites and Corequisites)

| Requisites | Category and Justification |
|------------|----------------------------|
|------------|----------------------------|

### B. Requisite Skills

| Requisite Skills |
|------------------|
|------------------|

### C. Recommended Preparations (Course and Non-Course)

| Recommended Preparation  | Category and Justification   |
|--|--|
| Non-Course Recommended Preparation<br>Eligibility for English 1A | Students in this class must write at least a seven-page research paper following all MLA standards, citing at least three sources and demonstrating analytical and critical thinking skills. In addition, there are four homework assignments of at least two pages each that require students to analyze some aspect of the mass media and society and demonstrate critical thinking skills. These requirements mean students |

|  |
|--|
| need to be English 1A eligible to be successful in the course. |
|--|

#### D. Recommended Skills

| Recommended Skills   |
|--|
| Select and employ reading strategies to interpret the content of a college-level textbook, with special focus on constructing a thesis statement and providing valid support. ENGL 84 -<br>Select and employ reading strategies to interpret the content of a college-level textbook, with special focus on constructing a thesis statement and providing valid support. |
| Read and apply critical thinking skills to college-level expository prose for the purposes of writing and discussion ENGL A - Read and apply critical thinking skills to college-level expository prose for the purposes of writing and discussion.  |
| Apply appropriate strategies in the writing process including prewriting, composing, revising, and editing techniques ENGL A - Apply appropriate strategies in the writing process including prewriting, composing, revising, and editing techniques.  |

#### E. Enrollment Limitations

| Enrollment Limitations and Category | Enrollment Limitations Impact |
|-------------------------------------|-------------------------------|
|-------------------------------------|-------------------------------|

Course created by W. A. Kamrath on 03/01/1978.

**BOARD APPROVAL DATE:**

**Last Reviewed and/or Revised by Allison Carr on 10/26/2013**

18278



# El Camino College

## COURSE OUTLINE OF RECORD - Approved

### I. GENERAL COURSE INFORMATION

**Subject and Number:** Mathematics 73  
**Descriptive Title:** Intermediate Algebra for General Education

**Course Disciplines:** Mathematics

**Division:** Mathematical Sciences

**Catalog Description:** This intermediate algebra course is designed for students who are not considering further study in the sciences, technology, engineering or mathematics. In the context of studying basic functions and their graphs, students strengthen and expand their algebra skills. Functions studied include linear, quadratic, polynomial, rational, and radical functions, as well as the absolute value function. Particular emphasis is placed on the operations on functions, solving equations and inequalities, as well as using functions to model real life situations. Other topics include solving systems of equations and applications.

*Note: Mathematics 73 serves as a prerequisite course for all transfer-level mathematics course sequences, except the calculus sequence (Mathematics 170, 180, 190, 191 and 220).*

**Conditions of Enrollment:** Prerequisite

Mathematics 40 or

Mathematics 43

with a minimum grade of C in prerequisite

or

qualification by testing (El Camino College Mathematics Placement Test) and assessment

**Course Length:**  Full Term  Other (Specify number of weeks):

**Hours Lecture:** 5.00 hours per week  TBA

**Hours Laboratory:** 0 hours per week  TBA

**Course Units:** 5.00

**Grading Method:** Letter  
**Credit Status:** Associate Degree Credit

Transfer CSU:  No

Transfer UC:  No

General Education:

El Camino College: 6 – Mathematics Competency

Term:

Other:

CSU GE:

IGETC:

## II. OUTCOMES AND OBJECTIVES

**A. COURSE STUDENT LEARNING OUTCOMES (The course student learning outcomes are listed below, along with a representative assessment method for each. Student learning outcomes are not subject to review, revision or approval by the College Curriculum Committee)**

1. Given information on two sides of a right triangle, the student will be able to correctly determine the third side using the Pythagorean Theorem and write the solution in simplest exact form.
2. The student demonstrates the ability to interpret, draw conclusions or solve problems using visual or graphical representations.

The above SLOs were the most recent available SLOs at the time of course review. For the most current SLO statements, visit the El Camino College SLO webpage at <http://www.elcamino.edu/academics/slo/>.

**B. Course Student Learning Objectives (The major learning objective for students enrolled in this course are listed below, along with a representative assessment method for each)**

1. Carry out numerical operations and manipulate algebraic expressions, including expressions with rational and negative exponents.  
Objective Exams
2. Recognize functional relationships in the form of graphs, data or symbolic equations.  
Objective Exams
3. Solve problems involving a variety of function types, including linear, quadratic, polynomial, rational and radical functions, as well as the absolute value function.  
Objective Exams
4. Graph a variety of functions and relations and draw connections between these graphs and solutions to problems.  
Objective Exams
5. Solve a variety of equations and inequalities, as well as systems of equations and inequalities, using algebraic and graphical methods. Types of equations include linear, quadratic, polynomial, rational and radical equations, as well as absolute value equations.

## Objective Exams

6. Using numerical, symbolic and graphical methods, model application problems, solve them and interpret the results in the context of the problem.

## Objective Exams

**III. OUTLINE OF SUBJECT MATTER (Topics are detailed enough to enable a qualified instructor to determine the major areas that should be covered as well as ensure consistency from instructor to instructor and semester to semester.)**

| Lecture or Lab | Approximate Hours | Topic Number | Major Topic  |
|----------------|-------------------|--------------|--|
| Lecture        | 13                | I            | <p><b>BASIC OPERATIONS AND MANIPULATIONS:</b></p> <ul style="list-style-type: none"> <li>- Review of operations on polynomial, rational and radical expressions</li> <li>- Operations on power expressions with negative or rational exponents, as well as absolute value expressions</li> <li>- Factoring polynomial expressions</li> <li>- Rewriting radical expressions as expressions with rational exponents</li> </ul>   |
| Lecture        | 18                | II           | <p><b>FUNCTIONS:</b></p> <ul style="list-style-type: none"> <li>- Definitions of function, domain and range</li> <li>- Function notation</li> <li>- Functions as rules, as sets of ordered pairs, as algebraic equations, and as graphs. Function types include polynomial, power, rational, radical, and the absolute value</li> <li>- Operations on functions, including addition, subtraction, multiplication, division, exponentiation and composition</li> <li>- Determining the equation for the linear function given the graph or sufficient data</li> </ul>   |
| Lecture        | 19                | III          | <p><b>GRAPHING:</b></p> <ul style="list-style-type: none"> <li>- Graphing functions of all types, especially the basic functions</li> </ul> <p><math>f(x) = x, x^2, x^3, (1)/(x),  x , \sqrt{x}</math></p> <ul style="list-style-type: none"> <li>- Graphing solutions to equations and inequalities</li> <li>- Graphing quadratic functions using the completing-the-square technique to identify the vertex of a parabola</li> <li>- Graphing equations of circles, using the completing-the-square technique to identify the circle of the circle</li> <li>- Transformations of graphs of functions, including translations, reflections and re-scalings</li> </ul> |
| Lecture        | 21                | IV           | <p><b>EQUATIONS AND INEQUALITIES:</b></p> <ul style="list-style-type: none"> <li>- Algebraic and graphical methods for solving equations and inequalities</li> <li>- Techniques for solving quadratic inequalities over the real numbers</li> <li>- Techniques for solving other equations and inequalities, which contain linear, quadratic, rational and radical expressions, as well as the absolute value of linear</li> </ul>   |

|                               |    |    |  |
|-------------------------------|----|----|--|
|                               |    |    | <ul style="list-style-type: none"> <li>expressions</li> <li>- Finding domains of radical and rational functions by setting up and solving appropriate inequalities</li> <li>- Using interval notation to express solutions of inequalities</li> <li>- Operations on sets: unions and intersections</li> <li>- Systems of linear equations (2 x 2 systems only)</li> </ul>  |
| Lecture                       | 19 | V  | <p><b>APPLICATIONS:</b></p> <ul style="list-style-type: none"> <li>- Modeling verbally expressed problems numerically, symbolically and graphically</li> <li>- Solving problems numerically, symbolically and graphically</li> <li>- Pattern recognition strategies</li> <li>- Perimeter and area of rectangles, triangles and circles</li> <li>- Pythagorean Theorem</li> <li>- Rate, distance and time problems</li> <li>- Other applied problems whose solutions utilize the function types listed above, as well as the types of equations and inequalities listed above</li> <li>- Applied problems whose solutions require the use of systems of linear equations</li> </ul> |
| <b>Total Lecture Hours</b>    |    | 90 |  |
| <b>Total Laboratory Hours</b> |    | 0  |  |
| <b>Total Hours</b>            |    | 90 |  |

#### IV. PRIMARY METHOD OF EVALUATION AND SAMPLE ASSIGNMENTS

##### A. PRIMARY METHOD OF EVALUATION:

Problem solving demonstrations (computational or non-computational)

##### B. TYPICAL ASSIGNMENT USING PRIMARY METHOD OF EVALUATION:

Solve the inequality  $x^2 - 2 > 2$ , check your work and present the solution in interval notation. Also, graph the solution on a number line.

##### C. COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:

1. Give an example of a quadratic equation in one variable that has 4 as its only solution. Explain why in a sentence or two and provide a graph to illustrate your reasoning.
2. If  $H(t) = 1.59t + 90.31$  is the total number of U.S. households, in million, at  $t$  years since 1990 and if  $B(t) = 4.33t - 40.63$  is the number of Broadband cable subscribers and  $D(t) = 0.536t^2 - 10.32t + 52.85$  is the number of DSL subscribers, both in millions,

at  $t$  years since 1990, find an equation for the percentage  $P(t)$  of U.S. households who are either Broadband or DSL subscribers. Assume no one household subscribes to both services. Predict when 90% of U.S. households will have either Broadband or DSL subscriptions.

#### D. OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:

Other exams

Quizzes

Homework Problems

#### V. INSTRUCTIONAL METHODS

Lecture

**Note: In compliance with Board Policies 1600 and 3410, Title 5 California Code of Regulations, the Rehabilitation Act of 1973, and Sections 504 and 508 of the Americans with Disabilities Act, instruction delivery shall provide access, full inclusion, and effective communication for students with disabilities.**

#### VI. WORK OUTSIDE OF CLASS

Study

Required reading

Problem solving activities

**Estimated Independent Study Hours per Week: 10**

#### VII. TEXTS AND MATERIALS

##### A. UP-TO-DATE REPRESENTATIVE TEXTBOOKS

A. Tussy and R. Gustafson. INTERMEDIATE ALGEBRA. 5th ed. Brooks/Cole, 2012.

##### B. ALTERNATIVE TEXTBOOKS

##### C. REQUIRED SUPPLEMENTARY READINGS

##### D. OTHER REQUIRED MATERIALS

#### VIII. CONDITIONS OF ENROLLMENT

##### A. Requisites (Course and Non-Course Prerequisites and Corequisites)

| Requisites                                     | Category and Justification |
|--|----------------------------|
| Course<br>Prerequisite<br>Mathematics-40<br>or | Sequential                 |

|                                       |   |
|---------------------------------------|---|
| Course Prerequisite Mathematics-43 or | Sequential  |
| Non-Course Prerequisite               | Through periodic review of our cut scores for the placement exam, faculty have found that a student that do not meet the minimum cut scores for Mathematics 73 are highly unlikely to succeed in the course because they lack the necessary entry skills. |

### B. Requisite Skills

| Requisite Skills  |
|---|
| Manipulate algebraic expressions including expressions with fractions and radicals MATH 40 - Use the properties of the real numbers to evaluate, simplify, and factor algebraic expressions, including expressions with fractions and radicals.MATH 43 - Perform operations with and simplify rational and radical expressions.   |
| Solve quadratic equations and systems of linear equations MATH 43 - Solve systems of two linear equations with two variables symbolically, graphically and numerically..MATH 40 - Solve linear equations and inequalities, systems of two linear equations with two variables, and quadratic equations.MATH 43 - Solve quadratic equations symbolically, using a variety of algebraic methods, as well as graphically.MATH 40 - Set up and solve application problems using linear equations and inequalities, systems of two linear equations with two variables, and quadratic equations. |
| Graph systems of linear equations MATH 43 - Solve systems of two linear equations with two variables symbolically, graphically and numerically..MATH 40 - Graph linear equations and systems of linear equations by plotting points or by using intercepts and the slope.   |
| Solve application problems using linear and quadratic equations MATH 40 - Set up and solve application problems using linear equations and inequalities, systems of two linear equations with two variables, and quadratic equations.MATH 43 - Set up and solve application problems using quadratic equations, rational equations and systems of two linear equations with two variables.  |

### C. Recommended Preparations (Course and Non-Course)

| Recommended Preparation | Category and Justification |
|-------------------------|----------------------------|
|-------------------------|----------------------------|

### D. Recommended Skills

| Recommended Skills |
|--------------------|
|--------------------|

### E. Enrollment Limitations

| Enrollment Limitations and Category | Enrollment Limitations Impact |
|-------------------------------------|-------------------------------|
|-------------------------------------|-------------------------------|

Course created by Lars Kjeseth on 04/21/2008.

BOARD APPROVAL DATE: 06/16/2008

Last Reviewed and/or Revised by Lars Kjeseth on 02/21/2013



# El Camino College

## COURSE OUTLINE OF RECORD - Official

### I. GENERAL COURSE INFORMATION

**Subject and Number:** Mathematics 80  
**Descriptive Title:** Intermediate Algebra for Science, Technology, Engineering, and Mathematics

**Course Disciplines:** Mathematics

**Division:** Mathematical Sciences

**Catalog Description:** This intermediate algebra course is designed for students who are considering further study in the sciences, technology, engineering, or mathematics. In the context of studying a large library of basic functions and their graphs, students strengthen and expand their algebra skills. This library includes linear, quadratic, polynomial, rational, radical, exponential, and logarithmic functions, as well as inverse functions and the absolute value function. Particular emphasis is placed on the operations on functions, as well as solving equations and inequalities. Other topics include solving systems of equations, operations on complex numbers, and applications.

*Note: Mathematics 80 serves as a prerequisite course for all transfer-level mathematics course sequences, including the calculus sequence (Mathematics 170, 180, 190, 191 and 220).*

**Conditions of Enrollment: Prerequisite**

Mathematics 40 or

Mathematics 43

with a minimum grade of C in prerequisite

or

qualification by testing (El Camino College Mathematics Placement Test) and assessment

**Course Length:**  Full Term  Other (Specify number of weeks):  
**Hours Lecture:** 5.00 hours per week  TBA  
**Hours Laboratory:** 0 hours per week  TBA  
**Course Units:** 5.00

**Grading Method:** Letter

**Credit Status****Associate Degree Credit**

Transfer CSU:

 Effective Date: Proposed

Transfer UC:

 No

General Education:

El Camino College:

**4B – Language and Rationality – Communication and Analytical Thinking**

Term:

Other:

**6 – Mathematics Competency**

Term:

Other:

CSU GE:

IGETC:

**II. OUTCOMES AND OBJECTIVES**

**A. COURSE STUDENT LEARNING OUTCOMES (The course student learning outcomes are listed below, along with a representative assessment method for each. Student learning outcomes are not subject to review, revision or approval by the College Curriculum Committee)**

- Given a relation in graphical, tabular or equation form the student will be able to identify whether the relation represents a function or not with a verbal explanation (some form of definition, such as each input has only one output) in the case where the relation is a function, or with a counter example (either numerical or sketching on the graph or a rewriting of the equation) that clearly shows at least one input has multiple outputs.
- On a test in Elementary Algebra, Intermediate Algebra, or Geometry, where the student is given information on the lengths of two sides of a right triangle, the student will be able to coorrectly determine the third side using the Pythagorean Theorem and write the solution in simplest exact form.
- Given a quadratic function  $y = f(x) = 3x^2 - 2x - 4$  solve  $f(x) = 0$  using the quadratic formula and write the solution in simplest exact form.

The above SLOs were the most recent available SLOs at the time of course review. For the most current SLO statements, visit the El Camino College SLO webpage at <http://www.elcamino.edu/academics/slo/>.

**B. Course Student Learning Objectives (The major learning objective for students enrolled in this course are listed below, along with a representative assessment method for each)**

- Carry out numerical operations and manipulate algebraic expressions, including expressions with rational and negative exponents, complex numbers, and logarithms.  
Objective Exams
- Recognize functional relationships in the form of graphs, data or symbolic equations.  
Objective Exams
- Solve problems involving a variety of function types, including linear, quadratic,

polynomial, rational, radical, exponential, and logarithmic functions.

Objective Exams

- Graph a variety of functions and relations and draw connections between these graphs and solutions to problems.

Objective Exams

- Solve a variety of equations and inequalities, as well as systems of equations and inequalities, using algebraic and graphical methods. Types of equations include linear, quadratic, polynomial, rational, radical, exponential and logarithmic equations.

Objective Exams

- Using numerical, symbolic and graphical methods, model application problems, solve them and interpret the results in the context of the problem.

Objective Exams

**III. OUTLINE OF SUBJECT MATTER (Topics are detailed enough to enable a qualified instructor to determine the major areas that should be covered as well as ensure consistency from instructor to instructor and semester to semester.)**

| Lecture or Lab | Approximate Hours | Topic Number | Major Topic   |
|----------------|-------------------|--------------|---|
| Lecture        | 13                | I            | <b>BASIC OPERATIONS AND MANIPULATIONS:</b> <ul style="list-style-type: none"> <li>- Review of operations on polynomial, rational and radical expressions</li> <li>- Operations on exponential and logarithmic expressions, power expressions with negative or rational exponents, as well as absolute value expressions</li> <li>- Factoring polynomial expressions</li> <li>- Rewriting radical expressions as expressions with rational exponents</li> <li>- Properties of exponential and logarithmic expressions</li> <li>- Conversion between logarithmic and exponential statements</li> <li>- Operations on complex numbers</li> </ul>     |
| Lecture        | 18                | II           | <b>FUNCTIONS:</b> <ul style="list-style-type: none"> <li>- Definitions of function, domain and range</li> <li>- Function notation</li> <li>- Functions as rules, as sets of ordered pairs, as algebraic equations, and as graphs. Function types include polynomial, power, rational, radical, exponential, logarithmic and the absolute value</li> <li>- Operations on functions, including addition, subtraction, multiplication, division, exponentiation and composition</li> <li>- One-to-one functions</li> <li>- Inverse functions</li> <li>- Determining the equation for a linear function given the graph or sufficient data</li> </ul> |
| Lecture        | 19                | III          | <b>GRAPHING:</b> <ul style="list-style-type: none"> <li>- Graphing functions of all types, especially the basic functions</li> </ul> $f(x) = x, x^2, x^3, \sqrt{x},  x , 1/x, ax, \log_a(x).$   |

|                               |    |    |   |
|-------------------------------|----|----|---|
|                               |    |    | <ul style="list-style-type: none"> <li>- Graphing solutions to equations and inequalities</li> <li>- Graphing basic conic sections</li> <li>- Graphing quadratic functions using the completing-the-square technique to identify the vertex of a parabola</li> <li>- Transformations of graphs of functions, including translations, reflections and rescalings</li> </ul>  |
| Lecture                       | 21 | IV | <p>EQUATIONS AND INEQUALITIES:</p> <ul style="list-style-type: none"> <li>- Algebraic and graphical methods for solving equations and inequalities</li> <li>- Techniques for solving quadratic equations over the complex numbers</li> <li>- Techniques for solving quadratic inequalities over the real numbers</li> <li>- Techniques for solving other equations and inequalities, which contain polynomial, rational, radical exponential and logarithmic expressions, as well as the absolute value of linear expressions</li> <li>- Finding domains of radical, rational and logarithmic functions by setting up and solving appropriate inequalities</li> <li>- Using interval notation to expression solutions of inequalities</li> <li>- Operations on sets: unions and intersections</li> <li>- Systems of linear equations (2 x 2 systems and 3 x 3 systems)</li> </ul> |
| Lecture                       | 19 | V  | <p>APPLICATIONS:</p> <ul style="list-style-type: none"> <li>- Modeling verbally expressed problems numerically, symbolically and graphically</li> <li>- Solving problems numerically, symbolically and graphically</li> <li>- Pattern recognition strategies</li> <li>- Perimeter and area of rectangles, triangles and circles</li> <li>- Pythagorean Theorem</li> <li>- Rate, distance and time problems</li> <li>- Exponential growth and decay problems</li> <li>- Other applied problems whose solutions utilize the function types listed above, as well as the types of equations and inequalities listed above</li> <li>- Applied problems whose solutions require the use of systems of linear equations</li> </ul>  |
| <b>Total Lecture Hours</b>    |    | 90 |   |
| <b>Total Laboratory Hours</b> |    | 0  |   |
| <b>Total Hours</b>            |    | 90 |   |

#### IV. PRIMARY METHOD OF EVALUATION AND SAMPLE ASSIGNMENTS

##### A. PRIMARY METHOD OF EVALUATION:

Problem solving demonstrations (computational or non-computational)

**B. TYPICAL ASSIGNMENT USING PRIMARY METHOD OF EVALUATION:**

Solve the inequality  $2x - \frac{3}{4} - x > 2$ , check your work and present the solution in interval notation. Also, graph the solution on a number line and on the x-y coordinate plane.

**C. COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:**

1. The price of computer technology has been dropping steadily for the past ten years. If a certain computer cost \$6700 ten years ago and a computer with the same level of computing power cost \$2200 three years ago, find the rate of decrease in cost of this level of computing power per year. Predict what this level of computing power would cost today. Why will this model stop making sense at some point in time? Show all of your work.
2. The population of the world in 1960 was about four billion human beings. If the population is growing according to the Malthusian model with an annual growth rate of 1.8%, what does this model predict the population of the world to be in the year 2000? Find the actual world population in the year 2000. Compare your answer with the actual world population in the year 2000. What does this tell you about the Malthusian model? Write a paragraph explaining your reasoning.

**D. OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:**

Other exams

Quizzes

Homework Problems

**V. INSTRUCTIONAL METHODS**

Lecture

**Note: In compliance with Board Policies 1600 and 3410, Title 5 California Code of Regulations, the Rehabilitation Act of 1973, and Sections 504 and 508 of the Americans with Disabilities Act, instruction delivery shall provide access, full inclusion, and effective communication for students with disabilities.**

**VI. WORK OUTSIDE OF CLASS**

Study

Required reading

Problem solving activities

**Estimated Independent Study Hours per Week: 10**

## VII. TEXTS AND MATERIALS

### A. UP-TO-DATE REPRESENTATIVE TEXTBOOKS

A. Tussy and R. Gustafson. INTERMEDIATE ALGEBRA. 4th ed. Brooks/Cole, 2008.

### B. ALTERNATIVE TEXTBOOKS

### C. REQUIRED SUPPLEMENTARY READINGS

### D. OTHER REQUIRED MATERIALS

## VIII. CONDITIONS OF ENROLLMENT

### A. Requisites (Course and Non-Course Prerequisites and Corequisites)

| Requisites                            | Category and Justification   |
|---------------------------------------|--|
| Course Prerequisite Mathematics-40 or | Sequential   |
| Course Prerequisite Mathematics-43 or | Sequential   |
| Non-Course Prerequisite               | Placement assessment is an officially recognized mechanism for controlling enrollment in developmental mathematics courses. Placement cut scores are periodically reviewed by faculty and adjusted to match success rates in the target courses. Students who do not meet the placement cut score for this class are statistically highly unlikely to succeed. |

### B. Requisite Skills

| Requisite Skills   |
|--|
| Manipulate algebraic expressions, including expressions with fractions and radicals. MATH 40 - Use the properties of the real numbers to evaluate, simplify, and factor algebraic expressions, including expressions with fractions and radicals. MATH 43 - Perform operations with and simplify rational and radical expressions.   |
| Solve quadratic equations and systems of linear equations. MATH 43 - Solve systems of two linear equations with two variables symbolically, graphically and numerically. MATH 43 - Solve quadratic equations symbolically, using a variety of algebraic methods, as well as graphically. MATH 40 - Set up and solve application problems using linear equations and inequalities, systems of two linear equations with two variables, and quadratic equations. |

### C. Recommended Preparations (Course and Non-Course)

| Recommended Preparation | Category and Justification |
|-------------------------|----------------------------|
|-------------------------|----------------------------|

### D. Recommended Skills

| Recommended Skills |
|--------------------|
|--------------------|

### E. Enrollment Limitations

| Enrollment Limitations and Category | Enrollment Limitations Impact |
|-------------------------------------|-------------------------------|
|-------------------------------------|-------------------------------|

**Course created by Amy Muneoka on 02/01/1977.**

**BOARD APPROVAL DATE:**

**Last Reviewed and/or Revised by Jacquelyn Sims on 08/26/2011**

17177



# El Camino College

## COURSE OUTLINE OF RECORD - Approved

### I. GENERAL COURSE INFORMATION

**Subject and Number:** Sociology 109  
**Descriptive Title:** Introduction to Elementary Statistical Methods for the Study of Behavior

**Course Disciplines:** Sociology  
 or Psychology

**Division:** Behavioral and Social Sciences

**Catalog Description:** This is a course in statistical methods and research design for the behavioral sciences. The course focuses on descriptive and inferential statistical techniques for summarizing research data and for making conclusions about the populations they represent. Students are introduced to the basic challenges and skills involved in successful undergraduate and graduate training in the behavioral sciences, including both reviewing and writing scientific research reports.

*Note: This course is the same as Psychology 9A.*

**Conditions of Enrollment:**

**Prerequisite**  
 Sociology 101 or  
 Psychology 5  
 AND  
 Mathematics 73 or  
 Mathematics 80  
 with a minimum grade of C in prerequisite

**Course Length:**  Full Term  Other (Specify number of weeks):  
**Hours Lecture:** 3.00 hours per week  TBA  
**Hours Laboratory:** 3.00 hours per week  TBA  
**Course Units:** 4.00

**Grading Method:** Letter  
**Credit Status:** Associate Degree Credit

**Transfer CSU:**  Effective Date: Prior to July 1992

|                           |  |
|---------------------------|--|
| <b>Transfer UC:</b>       | <input checked="" type="checkbox"/> <b>Effective Date: Prior to July 1992</b>                            |
| <b>General Education:</b> |  |
| <b>El Camino College:</b> | <b>4B – Language and Rationality – Communication and Analytical Thinking</b><br>Term: _____ Other: _____ |
| <b>CSU GE:</b>            | <b>B4 - Mathematics/Quantitative Thinking</b><br>Term: Fall 2005 Other: _____                            |
| <b>IGETC:</b>             | <b>2A - Mathematical Concepts and Quantitative Reasoning</b><br>Term: Fall 2007 Other: _____             |

## II. OUTCOMES AND OBJECTIVES

### A. COURSE STUDENT LEARNING OUTCOMES (The course student learning outcomes are listed below, along with a representative assessment method for each. Student learning outcomes are not subject to review, revision or approval by the College Curriculum Committee)

1. Logic of the Scientific Method: Students will be able to identify and differentiate research methodology versus statistics/data analysis.  
Fundamental Principles: Students will be able to calculate and interpret basic statistics, both descriptive (e.g., mean, Sum of Squares, variance, standard deviation) and inferential (e.g., coefficient of determination, Cohen's d, t-test, ANOVA, Pearson  $r$ ).
2. Everyday Application: Students will be able to evaluate the strengths and limitations research data in their efforts to understand everyday life experiences (e.g., deciding whether to decline a childhood vaccination or to modify lifestyle in view of risk factors).

The above SLOs were the most recent available SLOs at the time of course review. For the most current SLO statements, visit the El Camino College SLO webpage at <http://www.elcamino.edu/academics/slo/>.

### B. Course Student Learning Objectives (The major learning objective for students enrolled in this course are listed below, along with a representative assessment method for each)

1. Define and differentiate the following basic concepts in research: population, parameter, sample, statistic, predictor variable, response variable (dependent), predictor (independent) variable, extraneous variable, natural (organismic or subject) variable, and operational definition, inductive reasoning, and deductive reasoning.  
Other (specify)  
Research paper
2. Detail the goals of statistical data analysis by explaining how models explain and predict ("account for") data and how regularities uncovered by models can lead to the discovery of underlying mechanisms of behavioral phenomena.  
Other (specify)

## Research paper

3. Apply American Psychological Association (APA) format by writing reports suitable in format for submission to an APA-refereed journal, including review of scientific literature, abstract, method, results, and discussion.

Other (specify)

## Research paper

4. Construct and/or interpret the following numerical descriptions of data: grouped and ungrouped frequency distributions, stemplots, boxplots, bar graphs, histograms, and polygons.

Other (specify)

## Lab assignment and quiz

5. Define, calculate, and interpret different measures of central tendency (mean, median, and mode) for different data sets, including arrays, ungrouped frequency distributions, and grouped frequency distributions.

Other (specify)

## Lab assignment and quiz

6. Assess the mathematical characteristics of the mean in order to explain why it is the preferred measure of central tendency in many statistical applications.

Other (specify)

## Research paper

7. Define, calculate, and interpret measures of variation: (range, interquartile range, sum of squares, variance, and standard deviation) for different data sets, including arrays, ungrouped frequency distributions, and grouped frequency distributions.

Other (specify)

## Lab assignment and quiz

8. Categorize distributions in terms of skew and outliers by applying measures of central tendency and variation to calculate statistics.

Other (specify)

## Lab assignment

9. Calculate z-scores and use them to make probability statements about ranges of scores in a normal distribution.

Other (specify)

## Research papers

10. Assess error and precision by calculating and interpreting residuals, sum of squares of residuals, and mean squares of residuals.

Quizzes

11. Apply probability theory by (a) defining and differentiating relevant concepts such as sample space, event, outcome, mutual exclusiveness, independence, and exhaustiveness; (b) using the Addition and Multiplication Rules to calculate probabilities; and (c) calculating joint and conditional probabilities from frequency tables and explain how they can be used to infer relations between variables.

Other (specify)

## Research paper

12. Apply the Central Limit Theorem to determine various aspects of a sampling distribution of a statistic, including shape, mean, variance, and standard error.
  - Other (specify)
  - Lab assignment
13. Define and differentiate one- and two-tailed probabilities and explain how they are related to directional and nondirectional hypotheses.
  - Other (specify)
  - Research paper
14. Identify Null and Alternative Hypotheses for various research questions and express them mathematically in the form of linear models.
  - Other (specify)
  - Lab assignment
15. Determine statistical significance by defining and differentiating alpha levels, p values, Type I and Type II errors and applying these concepts to decisions regarding statistical hypotheses.
  - Other (specify)
  - Research paper
16. Calculate and interpret the following: (a) single sample cases when population parameters are known (z-tests) and unknown (t-tests); (b) twosample cases when the samples are independent and dependent (independent and correlated t-tests); (c) multi-sample (3 or more) independent cases with a single predictor variable (one-way ANOVA) and 2+ predictor variables (two-way ANOVA).
  - Other (specify)
  - Research paper
17. Conduct statistical tests by calculating and interpreting estimates of effect size, statistical power, degree of association, homogeneity of variance, and (for ANOVA) a posteriori comparisons (e.g., Tukey's HSD, Fischer's LSD).
  - Other (specify)
  - Lab assignment
18. Analyze and explain the advantages of multigroup and factorial research designs in comparison to single factor and two-group designs.
  - Other (specify)
  - Research paper
19. Measure and apply correlation and regression by (a) defining and differentiating these two concepts; (b) explaining their application in prediction and estimation; (c) differentiating between correlation and causation; (d) calculating either a Pearson Product Moment Correlation Coefficient or a Spearman r, (depending on the level of measurement of the bivariate data) and (e) calculating a regression line and its associated statistics (i.e., residual variance, standard error of the estimate, proportion of explained and unexplained variation, coefficient of determination).
  - Other (specify)
  - Lab assignment

**III. OUTLINE OF SUBJECT MATTER (Topics are detailed enough to enable a qualified instructor to determine the major areas that should be covered as well as ensure consistency from instructor to instructor and semester to semester.)**

| Lecture or Lab | Approximate Hours | Topic Number | Major Topic   |
|----------------|-------------------|--------------|---|
| Lecture        | 6                 | I            | Science and Statistical Analysis<br>A. Goals<br>1. Prediction and Explanation<br>2. Principle or Parsimony<br>B. Variables<br>1. Quantitative Versus Categorical<br>2. Predictor Versus Response<br>3. Manipulated Versus Natural<br>4. Bias and Precision  |
| Lecture        | 9                 | II           | Numerical Description of Data<br>A. Central Tendency<br>1. Mean<br>2. Median<br>3. Mode<br>4. Comparisons: Special Properties of the Mean<br>B. Measures of Dispersion<br>1. Sum of Squares<br>2. Variance<br>3. Standard Deviation<br>4. Interquartile Range<br>C. Defining and Assessing Skew and Outliers<br>D. Standard Scores and Z-Scores                               |
| Lecture        | 3                 | III          | Modeling Data and Estimating Parameters<br>A. Four Steps of Fitting Models to Data<br>B. Point Estimation: Parameters and Samples<br>C. Categorical Predictor Variables<br>D. Quantitative Predictor Variables<br>E. Null Versus Full Models<br>F. Defining and Estimating Effect Size  |
| Lecture        | 6                 | IV           | Probability<br>A. Definition<br>B. Randomness<br>C. Addition and Multiplication Rules<br>D. Probability Distributions<br>1. Law of Large Numbers: Models of Residuals<br>2. The Binomial Distribution<br>3. Central Limit Theorem and the Normal Distribution<br>4. Calculating Probabilities for Normally Distributed Variables<br>5. Normal Distribution Model of Residuals |
| Lecture        | 6                 | V            | Sampling Distributions and Interval Estimation<br>A. Sampling Distribution of the Mean<br>B. Calculating Confidence Intervals<br>1. Population Standard Deviation Known<br>2. Population Standard Deviation Unknown   |

|         |    |      |   |
|---------|----|------|---|
|         |    |      | C. Interpreting Confidence Intervals  |
| Lecture | 6  | VI   | Analyzing Data with Two Independent Groups<br>A. Confidence Interval for $\mu_1 - \mu_2$ to Decide Between Models<br>B. T-Distribution to Decide Between Models<br>C. Decision Error Rates: Neyman-Pearson Tradition                                      |
| Lecture | 6  | VII  | Analyzing Data with Three or More Independent Groups: ANOVA<br>A. Confidence Interval to Decide Between Models<br>B. F-Distribution to Decide Between Models<br>C. Fisher's LSD (Protected t)<br>D. ANOVA of Factorial Designs                            |
| Lecture | 6  | VIII | Increasing Experimental Precision<br>A. Sample Size: Power and Precision<br>B. Matched Pair and Within-Subject Designs  |
| Lecture | 6  | IX   | Linear Regression and Correlation<br>A. Scatterplots<br>B. Fitting a Regression Line to the Data<br>C. Evaluating the Fit of the Linear Regression Line<br>D. Correlation Coefficient   |
| Lab     | 6  | X    | Graphical Descriptions of Data<br>A. Frequency Distributions of Categorical Data<br>B. Frequency Distributions of Quantitative Data<br>C. Features of Distributions<br>D. Computer Graphing of Distributions  |
| Lab     | 6  | XI   | Library Literature Searches<br>A. Journals Versus Monographs<br>B. Psychological Abstracts<br>C. Computer Searches  |
| Lab     | 6  | XII  | The APA style of Manuscript Preparation<br>A. Title Page<br>B. Abstract<br>C. Review of the Literature<br>D. Method Section<br>1. Participants<br>2. Materials<br>3. Procedure<br>E. Results<br>F. Discussion<br>G. References<br>H. Tables<br>I. Figures |
| Lab     | 36 | XIII | Conducting Research<br>A. Choosing and Developing a Topic<br>B. Proposing a Project<br>C. Running the Study<br>1. Collecting Subjects<br>2. Collecting Data   |

|                               |     |  |  |
|-------------------------------|-----|--|--|
|                               |     |  | 3. Analyzing Data<br>D. The Final Report |
| <b>Total Lecture Hours</b>    | 54  |  |  |
| <b>Total Laboratory Hours</b> | 54  |  |  |
| <b>Total Hours</b>            | 108 |  |  |

#### IV. PRIMARY METHOD OF EVALUATION AND SAMPLE ASSIGNMENTS

##### A. PRIMARY METHOD OF EVALUATION:

Substantial writing assignments

##### B. TYPICAL ASSIGNMENT USING PRIMARY METHOD OF EVALUATION:

Read and analyze data from the study entitled, *Researching the Relationship Between Quality of Parental Relationships and Educational Goals in College Students*. Perform the appropriate statistical analysis on the data and state your conclusion. Write a research report in APA format that includes all the relevant elements: a review of scientific literature, description of the method, report of results (including figures and tables), and discussion.

##### C. COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:

1. Consider the following results and conclusion of a survey:

*The degree to which young girls participate in sports is positively correlated to a number of desirable variables (e.g., academic achievement, staying in school, avoiding drug and alcohol use) and is negatively correlated with a number of undesirable variables (e.g., breast cancer, eating disorder, unwed motherhood). These data show that parents and teachers should encourage young girls to become more active in sports.*

In a two-page paper, analyze the research design of this study and determine whether its conclusions are justified, focusing especially on causal inference.

2. After reading the research article distributed in class, consider the following survey results showing that decreasing health (as measured by the number of doctor appointments and hospitalizations) is associated with lower life satisfaction (as measured by the Life Satisfaction Inventory) and higher marital discord (as measured by divorce rate). In a two-page paper, identify the hypothetical

variables and analyze these variables in terms of their operational definitions.

#### D. OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:

Objective Exams

Reading reports

Written homework

Homework Problems

Term or other papers

Multiple Choice

Other (specify):

Calculation and short answer items, lab assignments, research papers

#### V. INSTRUCTIONAL METHODS

Demonstration

Laboratory

Lecture

Other (please specify)

data collection, computer data analysis

**Note: In compliance with Board Policies 1600 and 3410, Title 5 California Code of Regulations, the Rehabilitation Act of 1973, and Sections 504 and 508 of the Americans with Disabilities Act, instruction delivery shall provide access, full inclusion, and effective communication for students with disabilities.**

#### VI. WORK OUTSIDE OF CLASS

Study

Skill practice

Required reading

Problem solving activities

Written work

**Estimated Independent Study Hours per Week: 6**

#### VII. TEXTS AND MATERIALS

##### A. UP-TO-DATE REPRESENTATIVE TEXTBOOKS

Robert S. Lockhart. Introduction to Statistics and Data Analysis for Behavioral Science. VHPS, 2007.

American Psychological Association. Publication Manual of the American Psychological Association. APA, 2009.

**B. ALTERNATIVE TEXTBOOKS****C. REQUIRED SUPPLEMENTARY READINGS****D. OTHER REQUIRED MATERIALS****VIII. CONDITIONS OF ENROLLMENT****A. Requisites (Course and Non-Course Prerequisites and Corequisites)**

| <b>Requisites</b>                        | <b>Category and Justification</b>  |
|--|------------------------------------|
| Course Prerequisite<br>Sociology-101 or  | Sequential                         |
| Course Prerequisite<br>Psychology-5 AND  | Sequential                         |
| Course Prerequisite<br>Mathematics-73 or | Computational/Communication Skills |
| Course Prerequisite<br>Mathematics-80    | Computational/Communication Skills |

**B. Requisite Skills**

| <b>Requisite Skills</b>   |
|---|
| Students will learn statistical methods involved in the scientific method; they will more likely succeed if they are already familiar with this method as well as specific research topics used in Sociology 101, such as deviance and social control variables in social groups. SOC1 101 - Identify the six steps in the scientific method and distinguish between qualitative and quantitative research methods.<br>SOC1 101 - Evaluate the advantages and disadvantages of research methodologies sociologists use to gather and analyze data.  |
| Students will learn statistical methods involved in the scientific method; they will more likely succeed if they are already familiar with this method as well as specific research topics used in Psychology 5, such as cognition, emotion, and personality variables in individuals. PSYC 5 - Outline the steps of the scientific method, identify common research methods, and discuss ethical considerations of psychological research.   |
| Students will learn statistical methods including: a) creating and interpreting graphs of functional relationships between predictor and response variables, and b) solving linear regression equations; they will more likely succeed if they are already familiar with these concepts. MATH 73 - Recognize functional relationships in the form of graphs, data or symbolic equations. MATH 73 - Solve problems involving a variety of function types, including linear, quadratic, polynomial, rational and radical functions, as well as the absolute value function. MATH 73 - Graph a variety of functions and relations and draw connections between these graphs and solutions to problems. |
| The ability to solve equations for specific variables. MATH 80 - Recognize functional relationships in the form of graphs, data or symbolic equations. MATH 80 - Solve problems involving a variety of function types, including linear, quadratic, polynomial, rational, radical, exponential, and logarithmic functions. MATH 80 - Graph a variety of functions and relations and draw connections between these graphs and solutions to problems.  |

**C. Recommended Preparations (Course and Non-Course)**

| <b>Recommended Preparation</b> | <b>Category and Justification</b> |
|--------------------------------|-----------------------------------|
|--------------------------------|-----------------------------------|

**D. Recommended Skills**

| Recommended Skills |
|--------------------|
|--------------------|

**E. Enrollment Limitations**

| Enrollment Limitations and Category | Enrollment Limitations Impact |
|-------------------------------------|-------------------------------|
|-------------------------------------|-------------------------------|

Course created by Donald Fridley on 03/01/1978.

**BOARD APPROVAL DATE:**

**Last Reviewed and/or Revised by Richard Mascolo on 09/18/2013**

17572