Los Angeles Community College District

COURSE OUTLINE
(Replaces PNCR and Course Outline)

Section I: BASIC COURSE INFORMATION

OUTLINE STATUS: Course Update, 2005-2006

1. COLLEGE: Southwest

2. SUBJECT (DISCIPLINE) NAME: Mathematics
   (40 characters, no abbreviations)

3. COURSE NUMBER: 227

4. COURSE TITLE: Introductory Statistics

5. UNITS: 4

6. CATALOG COURSE DESCRIPTION -- Provide a description of the course, including an overview of the topics covered:
   
   This course is an introduction to statistics and probability, measures of central tendency and dispersion, descriptive and inferential statistics including sampling, estimation, hypothesis testing, analysis of variance, normal curve, Chi-square and student's t distributions. Linear correlation and regression analysis and applications in diverse disciplines are also presented as topics.

7. CLASS SCHEDULE COURSE DESCRIPTION -- Provide a brief description of the course, including an overview of the topics covered:
   
   Introductory course to statistics and probability, measures of central tendency and dispersion, descriptive and inferential statistics, linear correlation and regression analysis, and applications in diverse disciplines.

8. INITIAL COLLEGE COURSE APPROVAL DATE: 2/1/1991
   COLLEGE OUTLINE APPROVAL DATE: 11/15/05

9. UPDATES (check all applicable boxes):
   
   ✓ Content Previous Update: 1998
   ✓ Objectives Previous Update: 1998
   □ College Specific Course Attributes/Data Elements Previous Update:
   □ Districtwide Course Attributes/Data Elements Previous Update:
   ✓ Other (describe) Previous Update:

   Minor change in course description; Prerequisite revalidation

10. CLASS HOURS:

   1 Underlined course attributes are the same for the course throughout the LACCD; all other course attributes are college specific.
"Standard Hours" per Week (based on 18 weeks) | Total Hours per Term (hrs per week x 18) | Units
--- | --- | ---
Lecture: | 4 | 72 | 4
Lab/activity (w/ homework): |
Lab/activity (w/o homework): |
Total: | 4 | 72 | 4

Note: The Carnegie Rule and Title 5, section 55002 sets forth the following minimum standards: 1 unit = 1 hour lecture per week, 2 hours homework per week; OR 2 hours per week of lab with homework; OR 3 hours of lab per week without homework. The hours per week are based on a standard 18-week calendar. Lecture also includes discussion and/or demonstration hours, laboratory includes activity and/or studio hours.

11. PREREQUISITES, COREQUISITES, ADVISORIES ON RECOMMENDED PREPARATION, and LIMITATION ON ENROLLMENT

Note: The LACCD’s Policy on Prerequisites, Corequisites and Advisories requires that the curriculum committee takes a separate action verifying that a course’s prerequisite, corequisite or advisory is an “appropriate and rational measure of a student’s readiness to enter the course or program” and that the prerequisite, corequisite or advisory meets the level of scrutiny delineated in the policy.

ENTRY SKILLS FOR COURSES WITH PREREQUISITES:
Students should be able to solve problems using:

1. Real Numbers
2. Linear Equations and Inequalities
3. Exponents and Polynomials
4. Rational Expressions
5. Roots and Radicals
6. Quadratic Equations
7. The Straight Line
8. Exponential and Logarithmic Functions
9. Binomial Theories

Prerequisites: Yes  (If Yes, complete information below)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Number</th>
<th>Course Title</th>
<th>Units</th>
<th>Validation Approval Date (official use only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>125</td>
<td>Intermediate Algebra</td>
<td>5</td>
<td>11/15/05 (previously 5/19/98)</td>
</tr>
</tbody>
</table>

Corequisite: None  (If Yes, complete information below)
Section II: COURSE CONTENT AND OBJECTIVES

1. COURSE CONTENT AND OBJECTIVES:

<table>
<thead>
<tr>
<th>COURSE CONTENT AND SCOPE –Lecture: If applicable, outline the topics included in the lecture portion of the course (outline reflects course description, all topics covered in class).</th>
<th>Hours per topic</th>
<th>COURSE OBJECTIVES - Lecture (If applicable): Upon successful completion of this course, the student will be able to… (Use action verbs – see Bloom’s Taxonomy below for “action verbs requiring cognitive outcomes.”)</th>
</tr>
</thead>
</table>
| Measures of Central Tendencies and Variations  
  a. Mean, modes, medians, variance and standard deviation  
  b. Z-score  
Sample Spaces and Probability Distribution  
  a. Mutually Exclusive Events  
  b. Independent Events  
  c. Conditional Events  
Random Variables  
  a. Discrete  
  b. Continuous  
Binomial and Normal Distributions  
  a. Applications  
Linear Regression and Correlation  
  a. Correlation  
  b. Coefficient of Determination  
  c. Line of Best Fit  
Central Limit Theorem  
Statistical Inference  
  a. Confidence Interval (Estimation of parameters)  
  b. Sample Size  
Testing of Hypothesis  
  a. Difference Between Two Population Means  
  b. Difference Between Two Population Proportions  
Chi Square Distribution  
Analysis of Variance  
  a. Comparing More Than Two Population |

8 | 1. Compute the measures of Central Tendency: the mean, mode, median, as well as the quartiles and percentiles of grouped or ungrouped data.  
2. Compute the measures of variations, standard deviations, variance, and range of grouped or ungrouped data.  
3. Find and exhibit the probability of events and the Z-score of sample data.  
4. Identify, demonstrate and apply the use of the Binomial and Normal Distribution in statistical applications.  
5. Explain and use the Central Limit Theorem.  
6. Make inferences of population parameters.  
7. Describe and use the Chi Square distribution.  
8. Describe and explain statistical estimation and test of hypotheses.  
9. Test hypotheses of population parameters from sample data.  
10. Discuss and write a linear model for the relationship between two variables.  
11. Apply these concepts to diverse disciplines, i.e., psychology, sociology, political science. |

STUDENT LEARNING OUTCOMES:
Means
  b. Randomized Block Design
Contingency Tables
  a. The Multinomial Distribution
  b. Fixed Marginal Totals

Final Comprehensive Two-Hour Examination

| 4 | As a result of this learning experience, a student can:
|   | 1. Solve confidence Interval problems.
|   | Example: The growing seasons for a random sample of 35 U.S. cities were recorded, yielding a sample mean of 190.7 days and a sample standard deviation of 54.2 days. Estimate the true population mean of the growing seasons with 95% confidence.
|   | 2. Test the difference between two means, two variances, and two proportions.
|   | Example: It is commonly felt by people in northwest Ohio that on interstate 75 drivers from Michigan drive faster than drivers from Ohio. To examine the claim, a class checks the speed of 50 Michigan drivers and found the mean to be 67 miles per hour with a standard deviation of 8 miles per hour. They check the speed of 50 Ohio drivers and found the mean to be 64 miles per hour with a standard deviation of 7 miles per hour. If we let $\alpha = 0.05$, is the perception that Michigan drivers are faster correct?

| Total Lecture hours* | 72 |

| COURSE CONTENT AND SCOPE -- Laboratory: | Hours per Topic |
| If applicable, outline the topics included in the laboratory portion of the course (outline reflects course description, all topics covered in class). | COURSE OBJECTIVES - Laboratory (If applicable): Upon successful completion of this course, the student will be able to… (Use action verbs – see Bloom’s Taxonomy below for “action verbs requiring cognitive outcomes.”)² |

| Total Lab hours* |  |

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² In general “activity” courses or portions of courses are classified “laboratory.”

*Total lecture and laboratory hours (which include the final examination) must equal totals on page 1.
### Bloom’s Taxonomy

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Comprehension</th>
<th>Application</th>
<th>Analysis</th>
<th>Synthesis</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>define</td>
<td>translate</td>
<td>interpret</td>
<td>distinguish</td>
<td>compose</td>
<td>judge</td>
</tr>
<tr>
<td>repeat</td>
<td>restate</td>
<td>apply</td>
<td>analyze</td>
<td>plan</td>
<td>appraise</td>
</tr>
<tr>
<td>record</td>
<td>discuss</td>
<td>employ</td>
<td>differentiate</td>
<td>propose</td>
<td>evaluate</td>
</tr>
<tr>
<td>list</td>
<td>describe</td>
<td>use</td>
<td>calculate</td>
<td>design</td>
<td>rate</td>
</tr>
<tr>
<td>recall</td>
<td>recognize</td>
<td>demonstrate</td>
<td>experiment</td>
<td>formulate</td>
<td>compare</td>
</tr>
<tr>
<td>name</td>
<td>explain</td>
<td>practice</td>
<td>test</td>
<td>arrange</td>
<td>value</td>
</tr>
<tr>
<td>relate</td>
<td>express</td>
<td>illustrate</td>
<td>contrast</td>
<td>assemble</td>
<td>revise</td>
</tr>
<tr>
<td>underline</td>
<td>identify</td>
<td>operate</td>
<td>criticize</td>
<td>collect</td>
<td>score</td>
</tr>
<tr>
<td></td>
<td>locate</td>
<td>schedule</td>
<td>diagram</td>
<td>construct</td>
<td>select</td>
</tr>
<tr>
<td></td>
<td>report</td>
<td>shop</td>
<td>inspect</td>
<td>create</td>
<td>choose</td>
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<tr>
<td></td>
<td>review</td>
<td>sketch</td>
<td>debate</td>
<td>set up</td>
<td>assess</td>
</tr>
<tr>
<td></td>
<td>tell</td>
<td></td>
<td>inventory</td>
<td>organize</td>
<td>estimate</td>
</tr>
</tbody>
</table>

#### 2. REQUIRED TEXTS:

Provide a representative list of textbooks and other required reading; include author, title and date of publication:


#### 3. SUPPLEMENTARY READINGS:

Reading assignments may include, but are not limited to the following:

**Johnson, Robert, Elementary Statistics**

#### 4. WRITING ASSIGNMENTS:

Title 5, section 55002 requires grades to be “based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students.” Writing assignments in this course may include, but are not limited to the following:

**Student will be given samples of raw data from a population. The students must classify data and find the measures of the central tendencies and variation, compute the Z-scores, find confidence intervals, and test hypotheses.**
5. REPRESENTATIVE OUTSIDE ASSIGNMENTS:
Out of class assignments may include, but are not limited to the following:

Students are asked to work assigned problems at home in order to present them to the class preceding the lectures. A summary of all problems solved during the semester is requested.

6. REPRESENTATIVE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING:

Title 5, section 55002(a) requires that a degree-applicable course have a level of rigor that includes “critical thinking and the understanding and application of concepts determined by the curriculum committee to be at college level”. Critical thinking may include, but is not limited to analysis, synthesis, and evaluation. Provide examples of assignments that demonstrate critical thinking.

All assignments require computational skills and objective analysis: a development of critical thinking in interpreting abstract mathematical expressions as ideas in business, education, medicine, and other fields.

7. METHODS OF EVALUATION:

Title 5, section 55002 requires grades to be “based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays, or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students.” Methods of evaluation may include, but are not limited to the following (please note that evaluation should measure the outcomes detailed “Course Objectives” at the beginning of Section II):

Problem solving exercises, skills demonstrations, test, quizzes, and homework.

8. METHODS OF INSTRUCTION:

Methods of instruction may include, but are not limited to the following:

- Lecture
- Discussion
- Laboratory
- Activity
- Field Experience
- Independent Study
- Other (explain)

9. SUPPLIES:

List the supplies the student must provide.

Pencil, notebook/paper

10. COMPUTER COMPETENCY:

If applicable, explain how computer competency is included in the course.

None necessary; software available for those with access to computers
11. INFORMATION COMPETENCY:

Information competency is the ability to find, evaluate use, and communicate information in all its various formats. It combines aspects of library literacy, research methods and technological literacy. Information competency includes consideration of the ethical and legal implications and requires the application of both critical thinking and communications skills. If applicable, explain how information competency is included in the course.

Students can collect and analyze data.

12. DIVERSITY:

If applicable, explain how diversity (e.g., cultural, gender, etc.) is included in the course.

Mathematics is a universal language; global concepts applicable to statistics are introduced.

13. SCANS COMPETENCIES (required for all courses with vocational TOP Codes; recommended for all courses):

SCANS (Secretary’s Commission on Necessary Skills) are skills the Department of Labor identified, in consultation with business and industry leaders, which reflect the skills necessary for success in the workplace. Check the appropriate boxes to indicate the areas where students will develop the following skills (please note that all SCANS competencies do not apply to all courses):

RESOURCES

- Managing Time: Selecting relevant goal-related activities, ranking them in order of importance, allocating time to activities, and understanding, preparing and following schedules.

- Managing Money: Using or preparing budgets, including making cost and revenue forecasts; keeping detailed records to track budget performance, and making appropriate adjustments.

- Managing Material and Facility Resources: Acquiring, storing, allocating, and distributing materials, supplies, parts, equipment, space or final products in order to make the best use of them.

INTERPERSONAL

- Participating as Member of a Team: Working cooperatively with others and contributing to group’s efforts with ideas, suggestions and effort.

- Teaching Others New Skills: Helping others learn needed knowledge and skills.

- Exercising Leadership: Communicating thoughts, feelings, and ideas to justify a position, encouraging, persuading, convincing or otherwise motivating an individual or group, including responsibly challenging existing procedures, policies or authority.

- Negotiating: Working toward agreement that may involve exchanging specific resources or resolving divergent interests.

- Working with Cultural Diversity: Working well with men and women and with people from a variety of ethnic, social, or educational backgrounds.

INFORMATION

- Acquiring and Evaluating Information: Identifying a need for data, obtaining the data from existing sources or creating them, and evaluating their relevance and accuracy.

- Organizing and Maintaining Information: Organizing, processing and maintaining written or computerized records and other forms of information in a systematic fashion.
Interpreting and Communicating Information: Selecting and analyzing information and communicating the results of others, using oral, written, graphic, pictorial, or multimedia methods.

Using Computers to Process Information: Employing computers to acquire, organize, analyze and communicate information.

SYSTEMS

Understanding Systems: Knowing how social, organizational and technological systems work and operating effectively with them.

Monitoring and Correcting Performance: Distinguishing trends, predicting impacts of actions on system operations, diagnosing deviations in the functioning of a system/organization, and taking necessary steps to correct performance.

Improving or Designs Systems: Making suggestions to modify existing systems in order to improve the quality of products or services and developing new or alternative systems.

TECHNOLOGY

Selecting Technology: Judging which sets of procedures, tools or machines, including computers and their programs, will produce the desired results.

Applying Technology to Tasks: Understanding overall intent and proper procedures for setting up and operating machines, including computers and their reprogramming systems.

Maintaining and Troubleshooting Equipment: Preventing, identifying, or solving problems with equipment, including computers and other technologies.
Section III: RELATIONSHIP TO COLLEGE PROGRAMS

1. **THIS COURSE WILL BE AN APPROVED REQUIREMENT FOR AN APPROVED ASSOCIATE DEGREE OR CERTIFICATE PROGRAM:** **Yes**

   a. If yes, the course will be a [program requirement](http://misweb.cccco.edu/esed/webproginv/prod/invmenu.htm) portion of the "approved program" listed on the State Chancellor’s Inventory of Approved Programs (approved programs can be found on the State Chancellor’s Office website at http://misweb.cccco.edu/esed/webproginv/prod/invmenu.htm)

<table>
<thead>
<tr>
<th>Required for AS in Mathematics (Program ID 08450)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOTE: In order for a course to be approved as a requirement for an associate degree or certificate program, the program must be listed on the State Chancellor’s Office Inventory of Approved Programs AND the course must be listed in the college catalog as either a requirement or an elective for the program. If course is not part of an approved program at the college adopting the course, it will be considered to be a &quot;stand-alone&quot; course, and is subject to the State Chancellor’s approval criteria. The college must complete and submit the Chancellor’s Office “APPLICATION FOR APPROVAL OF CREDIT” form. Certain courses are granted &quot;blanket approval&quot; by the State Chancellor’s Office and do not require separate approval. See the Chancellor’s Office Program and Course Approval Handbook for details. LACCD Skills Certificates are not State approved programs and are not listed on the Chancellor’s Office Inventory of Approved Programs.</td>
</tr>
</tbody>
</table>

2. **GENERAL EDUCATION REQUIREMENTS FOR THE ASSOCIATE DEGREE STATUS:**

   a. **Area requested:** d(2) Communications and Analytical Thinking **Approval date:** before 1991

   If applicable, provide an explanation of how the course meets the General Education parameters for one of the five general education areas – Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education – contained in Board Rule 6201.14 - General Education Requirements. http://marlin.laccd.edu/district/BoardRules_AdmRegs/boardrules.htm

<table>
<thead>
<tr>
<th>2nd Area requested:</th>
<th>None</th>
<th>Approval date:</th>
</tr>
</thead>
</table>

If applicable, provide an explanation of how the course meets General Education parameters for an additional general education area – Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education – contained in Board Rule 6201.14 - General Education Requirements. http://marlin.laccd.edu/district/BoardRules_AdmRegs/boardrules.htm
Section IV: ARTICULATION INFORMATION
(Complete in consultation with College Articulation Officer)

1. TRANSFER STATUS:
   a. Transferable to the University of California: Yes
   b. UC approval date: before 1991
   c. Transferable to the California State University: Yes
   d. College approval date: before 1991

2. GENERAL EDUCATION FOR TRANSFER:
   IGETC Certification:
   a. Area requested: 2: Mathematical Concepts Quantitative Reasoning
   b. Date requested: before 1991
   c. IGETC approval date: 1991
   If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in IGETC Certification Guidelines.

   CSU Certification:
   a. Area requested: B-4: Mathematical Quantitative Reasoning
   b. Date requested: before 1991
   c. CSU approval date: before 1991
   If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in CSU Certification Guidelines.

   a. 2nd Area requested: None
   b. Date requested:
   c. IGETC approval date:
   If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in IGETC Certification Guidelines.

   a. 2nd Area requested: None
   b. Date requested:
   c. CSU approval date:
   If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in CSU Certification Guidelines.

3. MAJOR REQUIREMENT FOR TRANSFER – Will this course be articulated to meet lower division major requirements? YES
   List college/university and the majors:

<table>
<thead>
<tr>
<th>College/University</th>
<th>Major(s)</th>
</tr>
</thead>
</table>

   CAN NUMBER: CAN STAT 2   CAN SEQUENCE NUMBER:
   CAN Approval -- Date requested: 12/01   Date approved: Fall 2002
Section V: SUPPLEMENTAL COURSE INFORMATION

1. DEPARTMENT/DIVISION NAME: Mathematics

2. DEPARTMENT/DIVISION CODE: 08

3. SUBJECT CODE -- 3 characters, assigned by District Office: 589 (existing subject codes are available on the LACCD web site at http://www.laccd.edu/curriculum/directory-programs-courses/index.htm

4. SUBJECT ABBREVIATION -- 7 characters, assigned by District Office: MATH

5. SPC CODE -- 3 characters, assigned by District Office:

6. ABBREVIATION FOR TRANSCRIPTS -- 20 characters, assigned by District Office: MATH

7. DEGREE CREDIT: Indicate whether the course meet the "standards for approval" for degree credit course set forth in Title 5, section 55002(a)(2), which requires the course to have a degree of intensity, difficulty, and vocabulary that the curriculum committee has determined to be at the college level:
   This course is Degree Applicable

8. CREDIT/NO CREDIT GRADING: No

9. REPETITIONS -- Number of times course may be repeated for credit (three maximum): 0
   How does the repetition of this course meet Title 5, section 58161 requirements? A course may be repeatable when, "course content differs each time it is offered, and that the student who repeats it is gaining an expanded educational experience for one of the following reasons: (A) Skills or proficiencies are enhanced by supervised repetition and practice within class periods; or (B) Active participatory experience in individual study or group assignments is the basic means by which learning objectives are obtained."

10. PRIOR TO TRANSFERABLE LEVEL – This course attribute applies to English, writing, ESL, reading and mathematics courses ONLY. If applicable, indicate how many levels below the transferable level this course should be placed: Not applicable (Transferable)

11. CREDIT BASIC SKILLS -- Title 5, section 55502(d) defines basic skills as "courses in reading, writing, computation, and English as a Second Language, which are designated as non-degree credit courses pursuant to Title 5, section 55002(b)." No If Yes, course must be non-degree applicable.

12. CROSS REFERENCE -- Is this course listed as equivalent in content to existing College/District courses in another discipline? No
   If Yes, list courses (documentation of cross-discipline agreement must be provided):
13. COURSE SPECIFICALLY DESIGNED FOR STUDENTS WITH DISABILITIES -- Title 5, section 56029 allows a course to be repeatable when continuing success of the students with disabilities is dependent on additional repetitions of a specific class. Is this course designated as an "approved special class" for students with disabilities? No

If yes, provide an explanation of how this course meets the requirements of Title 5, section 56029.

14. COOPERATIVE EDUCATION STATUS -- Title 5, section 55252 allows for two types of Cooperative Education: 1) General Work Experience Education -- i.e., supervised employment, which is intended to assist students in acquiring desirable work habits, attitudes and career awareness, which need not be related to the students' educational goals; or 2) Occupational Work Experience Education -- i.e., supervised employment, extending classroom based occupational learning at an on-the-job learning station, which is related to the students' educational or occupational goal. Is this course part of the college's approved cooperative work experience education program? No

15. COURSE CLASSIFICATION: Liberal Arts Sciences

Note: A course's Classification, TOP Code and SAM code must be aligned – e.g., Courses with an "Occupational" Course Classification must have an "Occupational" TOP Code and a SAM Code of A, B, C, or D; courses that do not have an "Occupational" Course Classification cannot have an Occupational TOP Code and must have an "E" SAM Code. Courses coded as "basic skills" in #11 should be coded "Adult and Secondary Basic Skills."

16. TOP CODE – (6 digits XXXX.XX) 1701.00
Course content should match discipline description in Taxonomy of Programs found at www.cccco.edu/cccco/esed/curric/curriculum.htm.

17. SAM CODE (Student Accountability Model): E – Non-Occupational

SAM Codes (see CCC Chancellor’s Office Student Accountability Model Operations Manual, 1984) should be assigned as follows:

Priority "A" – Apprenticeship: Courses designed for an indentured apprentice must have the approval of the State of California, Department of Industrial Relations Department, Division of Apprenticeship Standards.

Priority "B" – Advanced Occupational: Courses taken by students in the advanced stages of their occupational programs. Courses should be offered in one specific occupational area only. Priority letter “B” should be assigned sparingly; in most cases, no more than two courses in any one program should be labeled “B.” “B”-level courses must have Priority “C” prerequisites in the same program area.

Priority "C" – Clearly Occupational: Courses generally taken by students in the middle stages of their programs should have a difficulty level sufficient to detract "drop-ins." Courses may be offered in several occupational programs within a broad area. The "C" priority, however, should also be used for courses within a specific program area when the criteria for "B" classification are not met. A "C"-level course should provide the student with entry-level job skills.

Priority "D" – Possibly Occupational: "D" courses are those taken by students in the beginning stages of their occupational programs. The "D" priority can also be used for service (or survey) courses for other occupational programs.

Priority "E" – Non-occupational.
SECTION VI: APPROVAL STATUS

1. APPROVAL STATUS:

   a. □ New Course . Board Approval Date: . Effective Semester: 
   b. □ Addition of Existing District Course . College Approval Date: . Effective Semester: 
   c. □ Course Change* . College Approval Date: . Effective Semester: 
   d. ☑ Outline Update . College Approval Date: 11/15/05

* Changes to a course require the completion of a “Course Change Request” form and approval by the college’s Curriculum Committee. In some cases districtwide approval is also required; see, Administrative Regulation E-65, section 3(c) for details.
LOS ANGELES COMMUNITY COLLEGE DISTRICT  
COURSE STANDARDS AND CRITERIA

Subject: MATHEMATICS  Number: 227  Course Title: INTRODUCTORY STATISTICS

Using the Official Course Outline, please determine whether or not the above listed credit course meets the following standards and criteria required in Title V, Part VI of the California Administrative Code, and which has been designated as appropriate to the Associate Degree. Place a (X) in the appropriate box.

<table>
<thead>
<tr>
<th>CRITERIA AND STANDARDS</th>
<th>RATING CRITERION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 55002</td>
<td>MET</td>
</tr>
<tr>
<td>Is recommended by the responsible college officials, and the academic senate or other</td>
<td>X</td>
</tr>
<tr>
<td>appropriate faculty body as meeting the requirements of this subsection and has</td>
<td></td>
</tr>
<tr>
<td>been approved by the local district governing board as a course meeting the needs of</td>
<td></td>
</tr>
<tr>
<td>the students for admission.</td>
<td></td>
</tr>
<tr>
<td>Is taught by a credentialed instructor in the discipline.</td>
<td>X</td>
</tr>
<tr>
<td>Is offered as described in an outline in official college files. That the outline</td>
<td>X</td>
</tr>
<tr>
<td>shall specify the unit value, scope, objectives, content in terms of a specific</td>
<td></td>
</tr>
<tr>
<td>body of knowledge, appropriate reading and writing assignments, outside of class</td>
<td></td>
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<tr>
<td>assignments, instructional methodology and methods of evaluation for determining</td>
<td></td>
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<tr>
<td>whether the stated objectives have been met by students.</td>
<td></td>
</tr>
<tr>
<td>Is taught in accordance with a set of instructional objectives common to all students.</td>
<td>X</td>
</tr>
<tr>
<td>Provides for measurement of students performance in terms of the stated course</td>
<td></td>
</tr>
<tr>
<td>objectives and culminates in a formal recorded grade based upon uniform standards</td>
<td></td>
</tr>
<tr>
<td>in accordance with Section 55578 of Title 5, which is permanently recorded as an</td>
<td></td>
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<tr>
<td>evaluation of student performance; bases grades on demonstrated proficiency in</td>
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<tr>
<td>subject matter determined by multiple measurement for evaluation; and has</td>
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<tr>
<td>examinations, including essays and/or, where appropriate, uses appropriate symbol</td>
<td></td>
</tr>
<tr>
<td>systems and/or skills demonstrations by students.</td>
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<tr>
<td>Grants units of credit based upon a specified relationship between the number of</td>
<td></td>
</tr>
<tr>
<td>lecture and/or laboratory hours or performance criteria specified in the course</td>
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<td>outline; and requires a minimum of three hours of work per week including class</td>
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<td>time for each unit of credit, prorated for short-term, lab and activity courses.</td>
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<td>Treats subject matter with a scope and intensity which requires students to study</td>
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<td>independently outside of class time.</td>
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<td>Requires, when appropriate, entrance skills and consequent prerequisites for the</td>
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<td>course before students are enrolled</td>
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<td>Requires the ability to think critically and to understand and apply concepts in</td>
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<td>order to participate in the course.</td>
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<tr>
<td>Requires learning skills and a vocabulary appropriate for a college course.</td>
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<td>Requires the use of college level educational materials.</td>
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CONTENT REVIEW FOR PREREQUISITE VALIDATION

MATHEMATICS 227, INTRODUCTORY STATISTICS
(Course to which pre/corequisite/advisory applies)

Check ☒ Prerequisite: Mathematics 125, Intermediate Algebra
☑ Corequisite:
☑ Advisory:

A. Target Course Entry Skills: Mathematics 227, Introductory Statistics
(For prerequisites/corequisites, list specific skills and/or knowledge necessary for students to succeed in the target class. For advisories, list skills/knowledge which will enrich or deepen the student's knowledge obtained from the course but without which the student may still succeed in the course. Attach additional sheet if necessary. NUMBER EACH SKILL.)

1. Real Numbers
2. Linear Equations and Inequalities
3. Exponents and Polynomials
4. Rational Expressions
5. Roots and Radicals
6. Quadratic Equations
7. The Straight Line
8. Exponential and Logarithmic Functions
9. Binomial Theories

B. Exit Skills Provided By Prerequisite/Corequisite/Advisory Course or Assessment: Mathematics 125, Intermediate Algebra
(List specific skills and/or knowledge that are the outcome of the prerequisite/corequisite/advisory course or assessment. For courses already in the curriculum, these should be present in the course objectives in the course outline. Attach additional sheet if necessary. NUMBER EACH SKILL.)

Upon successful completion of this course, the student will be able to:

1. Set up and solve mathematical equations involving linear, quadratic, exponential, radical and logarithmic equations.
2. Set up and solve words problems involving linear, quadratic, exponential, radical and logarithmic equations.
3. Construct graphical tables and graphs of various functions.
4. Factor various linear, quadratic, exponential, radical and logarithmic equations.
5. Set up and construct graphs involving inequalities and absolute inequalities using appropriate properties of linear, quadratic, exponential, radical and logarithmic equations.
CONTENT REVIEW SKILLS MATRIX FOR PREREQUISITE VALIDATION*

*Validation requires at least one match of each entry skill with any exit skill(s).

Mathematics 227
Introductory Statistics

Entering Skills of Target Course

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Was validation achieved? ____ YES or ____ NO

Comments:
(Include justification for assessments, health and safety, or non-course prerequisites)

Participants in Content Review:
(Signatories should include instructors for both exit and entering skills courses.)

Name: Gizaw Tadele Title: Faculty Initial: GT Date: 11/22/05

Name: ___________________________ Title: ___________________________ Initial: ______ Date: ______

Name: ___________________________ Title: ___________________________ Initial: ______ Date: ______

Certified By:

Gizaw Tadele 11/22/05
Initiator
James King Date
Department Chairperson
Linda Larson-Singer 11/16/05
Curriculum Chairperson Date
CERTIFICATION AND RECOMMENDATION

☒ This course meets Title 5 requirements for Associate Degree applicable college credit towards an Associate of Arts Degree.

☐ This course meets Title 5 requirements but does not satisfy the requirements for an Associate Degree applicable course.

We certify that the information and answers above properly represent this course.

Gizaw Tadele 11/22/05
Originator Date

James King 11/29/05
Department/Cluster Chairperson Date

Linda Larson Singer 11/16/05
Articulation Officer Date

Shelley Werts 11/28/05
Librarian Date

Earnestine Thomas-Robertson 11/29/05
Dean (if applicable) Date

Linda Larson Singer 11/16/05
Curriculum Committee Chairperson Date

Reggie Morris 11/22/05
Academic Senate President Date

Leige Henderson 12/02/05
Vice President, Academic Affairs Date

Audre Levy 12/05/05
College President Date