CHAFFEY COLLEGE

1964-1965
Chaffey Union College District
5885 Haven Ave.
Alta Loma, Calif.
Yukon 7-1737
Valley 2-7456

CHAFFEY COLLEGE

A Public Junior College

Catalog
and
Announcement of Courses
ACCREDITED BY
Western Association of Schools and Colleges

A MEMBER OF
American Association of Junior Colleges
California Junior College Association
Southern California Junior College Association

APPROVED BY
Veterans Administration
<table>
<thead>
<tr>
<th>TABLE OF CONTENTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Calendar</td>
<td>4-5</td>
</tr>
<tr>
<td>Board of Trustees and Administrative Staff</td>
<td>6</td>
</tr>
<tr>
<td>Faculty</td>
<td>8-15</td>
</tr>
<tr>
<td>The College</td>
<td>17-20</td>
</tr>
<tr>
<td>History</td>
<td>17</td>
</tr>
<tr>
<td>Philosophy</td>
<td>17</td>
</tr>
<tr>
<td>Functions</td>
<td>18</td>
</tr>
<tr>
<td>Buildings</td>
<td>19-20</td>
</tr>
<tr>
<td>Admission Requirements</td>
<td>23-24</td>
</tr>
<tr>
<td>Expenses</td>
<td>25</td>
</tr>
<tr>
<td>Guidance and Counseling</td>
<td>26</td>
</tr>
<tr>
<td>Enrollment Procedures</td>
<td>23-24</td>
</tr>
<tr>
<td>Graduation Requirements</td>
<td>27-29</td>
</tr>
<tr>
<td>College Regulations</td>
<td>30-34</td>
</tr>
<tr>
<td>Student Activities</td>
<td>37-40</td>
</tr>
<tr>
<td>The Associated Students of Chaffey College</td>
<td>37</td>
</tr>
<tr>
<td>The Student Body Card</td>
<td>38</td>
</tr>
<tr>
<td>Athletic Eligibility</td>
<td>40</td>
</tr>
<tr>
<td>Special Services for Students</td>
<td>40</td>
</tr>
<tr>
<td>Honors</td>
<td>41-42</td>
</tr>
<tr>
<td>Awards</td>
<td>42-44</td>
</tr>
<tr>
<td>Scholarships</td>
<td>45-47</td>
</tr>
<tr>
<td>Loans</td>
<td>47-48</td>
</tr>
<tr>
<td>Suggested Study Programs</td>
<td>51-76</td>
</tr>
<tr>
<td>Part I - Occupational Programs</td>
<td>51-66</td>
</tr>
<tr>
<td>Part II - Transfer Programs</td>
<td>67-76</td>
</tr>
<tr>
<td>Lower Division Requirements of Colleges and Universities</td>
<td>78-85</td>
</tr>
<tr>
<td>Announcement of Courses</td>
<td>88-156</td>
</tr>
<tr>
<td>Index</td>
<td>157-159</td>
</tr>
</tbody>
</table>
**Chaffey College Calendar 1964-1965**

**SUMMER SESSION 1964**

Classes will meet Monday through Thursday.

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964</td>
<td>June</td>
<td>12</td>
<td>Registration for summer session closes</td>
</tr>
<tr>
<td></td>
<td>June</td>
<td>17</td>
<td>SUMMER SESSION CLASSES BEGIN</td>
</tr>
<tr>
<td></td>
<td>June</td>
<td>19</td>
<td>Last day to add classes</td>
</tr>
<tr>
<td></td>
<td>July</td>
<td>2</td>
<td>Last day to drop courses without receiving an F grade</td>
</tr>
<tr>
<td></td>
<td>July</td>
<td>15</td>
<td>Last day to withdraw from college without receiving an F grade</td>
</tr>
<tr>
<td></td>
<td>July</td>
<td>29-30</td>
<td>Final examinations</td>
</tr>
<tr>
<td></td>
<td>July</td>
<td>30</td>
<td>End of regular summer session</td>
</tr>
<tr>
<td></td>
<td>August</td>
<td>12</td>
<td>Final examination in Aeronautics</td>
</tr>
<tr>
<td></td>
<td>August</td>
<td></td>
<td>End of Aeronautics summer session</td>
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**FALL SEMESTER 1964**

<table>
<thead>
<tr>
<th>Month</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept</td>
<td>8</td>
<td>Registration closes for both day and evening classes</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>New student orientation, 8-10 a.m.</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>CLASSES BEGIN</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>Last day to add classes</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>Last day to drop a semester class without receiving an F grade</td>
</tr>
<tr>
<td>Nov</td>
<td>9</td>
<td>Midterm examinations begin</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>Half-semester classes begin</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>Notices of unsatisfactory work issued</td>
</tr>
<tr>
<td></td>
<td>26-27</td>
<td>Thanksgiving vacation</td>
</tr>
<tr>
<td></td>
<td>21—</td>
<td>Christmas vacation begins</td>
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</table>
**CALENDAR**

**DECEMBER 1964**

1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31

**JANUARY 1965**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

**FEBRUARY 1965**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28

**MARCH 1965**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30

**APRIL 1965**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30

**MAY 1965**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30

**JUNE 1965**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30

**SPRING SEMESTER 1965**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>January 4</td>
<td>Classes resume</td>
</tr>
<tr>
<td>January 8</td>
<td>Last day to withdraw from college without receiving an F grade</td>
</tr>
<tr>
<td>January 20</td>
<td>Final examinations begin</td>
</tr>
<tr>
<td>January 27</td>
<td>Semester closes</td>
</tr>
<tr>
<td>January 28, 29</td>
<td>Between semesters recess</td>
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<table>
<thead>
<tr>
<th>Date</th>
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<tbody>
<tr>
<td>January 26</td>
<td>Registration closes for both day and evening classes</td>
</tr>
<tr>
<td>February 1</td>
<td>CLASSES BEGIN</td>
</tr>
<tr>
<td>February 5</td>
<td>Last day to add classes</td>
</tr>
<tr>
<td>February 12</td>
<td>Holiday—Lincoln’s Birthday</td>
</tr>
<tr>
<td>February 22</td>
<td>Holiday—Washington’s Birthday</td>
</tr>
<tr>
<td>March 17</td>
<td>Founders’ Day</td>
</tr>
<tr>
<td>March 19</td>
<td>Last day to drop a semester class without receiving an F grade</td>
</tr>
<tr>
<td>March 29</td>
<td>Midterm examinations begin</td>
</tr>
<tr>
<td>April 5</td>
<td>Half-semester classes begin</td>
</tr>
<tr>
<td>April 8</td>
<td>Notices of unsatisfactory work issued</td>
</tr>
<tr>
<td>April 12-16</td>
<td>Spring vacation</td>
</tr>
<tr>
<td>May 21</td>
<td>Last day to withdraw from college without receiving an F grade</td>
</tr>
<tr>
<td>May 31</td>
<td>Holiday—Memorial Day</td>
</tr>
<tr>
<td>June 8</td>
<td>Final examinations begin</td>
</tr>
<tr>
<td>June 13</td>
<td>Baccalaureate Service</td>
</tr>
<tr>
<td>June 18</td>
<td>48th annual commencement</td>
</tr>
</tbody>
</table>
CHAFFEY COLLEGE BOARD OF TRUSTEES
1963-1964

GEORGIA MELLON (Mrs.) - - - - - - Chairman
GEORGE W. VINNEDGE - - - - - - Vice-Chairman
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RALPH H. MILLER - - - - - - Trustee
RICHARD S. BARR - - - - - - Trustee
LAURA HOFMAN - Recording Secretary to Board of Trustees

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B.S., M.Ed., University of California at Berkeley

CLARENCE C. CALHOUN - - - - Dean of Instruction
B.S., M.S., Ph.D., University of California at Berkeley

LYNN O. HOLLIST - - - Dean of the Evening College
B.S., Utah State University; M.Ed., University of Alaska

WILLIAM C. GRONEWEG - Dean of Admissions and Records
B.A., Elmhurst College; M.A., University of Wisconsin

LESLIE H. STANDLEA - - - - Dean of Guidance
B.S., University of California at Berkeley; M.S., University of Southern California

JUNE TEITSWORTH - - - Dean of Student Activities
B.E., M.S., University of California at Los Angeles

JOSEPH B. IANTORNO - - Coordinator of Student Activities
B.A., M.A., Long Beach State College

SPECIAL SERVICES

Health Service - - - - - - Mrs. Helen Holley, R.N.
Community Service Officer - - - - - William C. Pryor, Jr.
Cafeteria Manager - - - - - - Paul Pace
Bookstore Manager - - - - - - Ralph Almquist
Dr. Wilcox  Mrs. Mellon  Mr. Barr
Mr. Vinnedge  Mr. Miller

Dr. Milliken

Mr. Grigsby  Mr. Wignall
FACULTY

(† indicates division chairman)

AANSTAD, LLOYD A. - - - - - - Aeronautics
   B.A., St. Olaf College

ALBRIGHT, SCOTT F. - - - - - - Business
   B.S., M.S., University of Southern California

ALEXANDER, DANA S. - - - - - - Physics, Engineering
   B.S., United States Military Academy

ARNER, RODNEY D. - - - - - - Mathematics
   B.A., University of California at Los Angeles;
   M.A., University of California at Berkeley

BARTELL, DONALD E. - - - History, Political Science
   B.A., M.A., University of Montana

BEARDWOOD, GEORGE B. - - Mathematics, Engineering
   B.S., University of California at Berkeley

†BEETS, RICHARD, M. - - - - - Biology, Botany
   A.B., University of California at Santa Barbara;
   M.A., Ph.D., Claremont Graduate School

BERGER, GORDON N. - - - - - - Vocal Music
   B.S., Trenton State Teachers College; M.A., Teachers College,
   Columbia University

BIRDSALL, BETTY JEAN (Mrs.) - - Dental Assisting
   University of California at Los Angeles

BLAIR, JOHN W. - - - - - - English
   B.A., M.A., Chico State College

BLANCHARD, WILLIAM B. - - - - - - Music
   B.A., Pomona College; M.A., Eastman School of Music

BORING, EUGENE B., JR. - - - - - - Life Science
   A.B., University of California at Berkeley

BOUL, MARY E. (Mrs.) - - - - - - Nursing
   B.S., San Francisco College for Women; R.N., Presentation
   School of Nursing, Sioux Falls, South Dakota

BOWERS, MIRIAM H. (Mrs.) - - Assistant Librarian
   B.A., Upland College

†BREWER, FLOYD LAWRENCE - - - - - - Psychology
   B.A., University of California at Riverside

BURNISON, JOHN F. - - - - - - Physical Education
   B.S., Ohio University; M.A., Purdue University

CALHOUN, CLARENCE C. - - - Dean of Instruction
   B.S., M.S., Ph.D., University of California at Berkeley

CHAPMAN, ELWOOD N. - - - - - - Business
   B.A., University of California at Berkeley;
   M.A., Claremont Graduate School

COBBERATH, GEORGE C. - - - - - - Physical Education
   B.A., Pomona College; M.A., Claremont Graduate School

CORNEJO, FELIPE N. - - - - - - Spanish
   Licenciado en Filosofía y Letras, University of Córdoba, Argentina;
   Licenciado en Teología, Gregorian University, Rome
FACULTY

DAVIS, HOMER W. - - - - - - - - - - Speech
B.S., University of Utah; M.A., Claremont Graduate School

DAWSON, KATHERINE (Mrs.) - - - - - Nursing
R.N., St. John’s Hospital School of Nursing, Springfield, Mo.;
B.S., Los Angeles State College

DICKEY, MARLIN L. - - - - - - - Geology
B.S., University of Redlands; M.S., University of Wyoming

ELSER, GEORGE C. - - - - - - - Librarian
B.A., University of California at Los Angeles; M.A., Middlebury College; M.S., in Library Science, University of Southern California

†FELSCH, FRED O. - - - - - - - Aeronautics, Counseling
Wright-Aeronautics; University of California at Los Angeles

FERNANDEZ, ALFRED P. - - - - - Geology, Chemistry
B.A., M.A., University of California at Los Angeles

FINNIE, THOMAS, S. - - - - - - - Electronics
A.A., Chaffey College; Curtiss Wright Technical Institute

FISK, MARGARET W. (Mrs.) - - - - - Social Science
A.B., M.A., University of California at Berkeley

FLECK, ROBERT J. - - - - - - - Art
B.A., Philadelphia Museum School of Art; M.F.A., University of Colorado

FLUM, ARTHUR E. - - - - - - - Mathematics
B.A., M.A., University of Southern California

FRIEL, JOYCE B. (Mrs.) - - - - - Dental Assisting
B.E., Los Angeles State College

FROST, JOHN S. - - - - - - - Electronics
A.A., Chaffey College; Capitol Radio Engineering Institute;
University of California at Los Angeles

GABLE, WILLIAM, JR. - - - - - - - Physical Education
B.S., University of Wisconsin; M.A., Claremont Graduate School

GEIGER, C. FRED - - - - - - - Chemistry
B.A., Fresno State College; M.A., Claremont Graduate School

†GENTILE, LOUIS J. - - - - - - - Business
B.A., Arizona State University; M.A., Claremont Graduate School

†GLENN, ELMER F. - - - - - - - Mathematics
B.S., United States Naval Academy

GREENLAW, HELEN M. - - - - - - Physical Education
B.A., Occidental College; M.A., Claremont Graduate School

GRIGSBY, WILLIAM L. - - - - - - - Comptroller
B.S., M.S., Central Missouri State College

GRIMM, LEWIS L. - - - - - - - Physics, Engineering
B.S., California Institute of Technology; M.A., Claremont Graduate School

GRIS, HENDRIK - - - - - - - - - - Art
Art Institute of Chicago

GRONEWEG, WILLIAM C. - Dean of Admissions and Records
B.A., Elmhurst College; M.A., University of Wisconsin

HARMON, WESLEY L. - - - - - - Counseling, Psychology
A.B., San Jose State College; M.A., Claremont Graduate School

HEMENWAY, FRANCES P. - - - - - Home Economics
B.A., Santa Barbara State College
HINRICHSEN, K. C. - - - - - - - - - - History
B.A., M.A., University of California at Berkeley

HOLLIST, LYNN O. - - Dean of the Evening College
B.S., Utah State University; M.Ed., University of Alaska

HOWARD, GILBERT A. - - - - - - - - Real Estate
B.S., Oregon State University; M.A., University of Oregon

IANTORNO, JOSEPH B. - Coordinator of Student Activities
B.A., M.A., Long Beach State College

IVINS, ANTHONY H. - - - - - - - - Art
B.S., Brigham Young University; M.F.A., University of Utah

JACK, CLYDE - - - - - Counseling, Psychology
B.A., Pomona College; M.A., Claremont Graduate School

JAHR, DORIS (Mrs.) - - - - - - - - Nursing
R.N., B.S., University of Minnesota

JOHNSON, MILDRED A. (Mrs.) - - - - Mathematics
A.B., Stanford University

JONES, VOLENA (Mrs.) - - - - - English
B.A., Willamette University

KELLOGG, STEPHEN J. - - - - - Zoology
B.S., University of Redlands; M.S., San Diego State College

KETCHUM, DONALD J. - - - - - - Electronics
B.S., University of California at Los Angeles

KILLEN, RICHARD R. - - - - - - English
B.A., University of California at Los Angeles; Diplôme d'Etudes de Civilisation Française, University of Paris; M.A., University of Redlands

LANGSTAFF, ANNA GAIL (Mrs.) - - - - Nursing
R.N., B.S., Vanderbilt University; M.S., University of California at Los Angeles

LATHAM, ROBERT - - - - - - Political Science
B.A., University of Southern California; M.A., Claremont Graduate School

LIZER, GRETCHEN A. - - - - - - - Speech
B.A., University of California at Los Angeles

LUBARSKY, ROBERT - - - - Bacteriology, Botany
B.S., Oklahoma A. and M. College; M.A., Ph.D., University of California at Los Angeles

MALONE, MICHAEL E. - - - - - - - English
B.A., M.A., University of Louisville

MARTIN, GERALD E. - - - - - English, German
A.B., University of California at Berkeley; A.M., Columbia University; Fortbildungslehrgang für Deutschlehrer, Goethe-Institut, Munich

MATHER, LEONARD S. - Counseling, Education, Psychology
B.S., University of California at Berkeley; M.S., University of Southern California

MILLER, CHARLES S. - - - - - - History
B.A., Princeton University; M.A., Claremont Graduate School; Fellowship, Syracuse University

MILLIKEN, DANIEL B. - - - - - - President
B.A., Pomona College; M.B.A., Harvard University; Ph.D., Claremont Graduate School
MYERS, EDWARD E. - Physiology, Biology, Anthropology
B.A., Adelphi College; M.A., Los Angeles State College

NASH, SHIRLEY (Mrs.) - Home Economics, Physical Education
B.A., M.A., Whittier College

NEWLEE, JOHN BARNEY - Speech, Physical Education
B.A., M.A., San Diego State College

NEWTON, RALPH J. E. - Business
B.A., M.B.A., University of Denver; Claremont Graduate School

NUNN, MARY B. - Counseling, History
B.A., University of California at Berkeley

OLSON, BETTY (Mrs.) - Physical Education
B.A., University of California at Berkeley

PARRATT, LLOYD P. - Biological Science
B.A., Miami University; M.A., Western Reserve University

PEAKER, ALLIS B. - English
B.A., University of California at Berkeley;
M.A., Claremont Graduate School

PERSONIUS, DARWIN N. - Aeronautics
University of the State of New York

PIERCE, JOHN W. - Engineering, Drafting
B.A., University of California at Santa Barbara;
M.A., Long Beach State College

PITTS, BILLIE P. (Mrs.) - Business
B.S., Northeastern State College, Oklahoma;
M.S., Oklahoma State University

POMPURA, SYLVIA A. (Mrs.) - Nursing
B.S., Marquette University; R.N., Mt. Sinai Hospital, Milwaukee

RAYMOND, JANE E. - Business English
B.A., University of California at Berkeley;
M.Ed. University of California at Los Angeles

REYNOLDS, JOSEPH E. - French
B.S., United States Military Academy; M.A., Middlebury College

RICHARDSON, EVELYN O. - Nursing
R.N., Hackensack Hospital, N.J.; B.S., M.A., New York University

RICHARDSON, WILLIAM - Business, Hygiene,
B.A., M.A., College of the Pacific
Physical Education

ROBERTS, MYRON - English, Journalism
A.B., Los Angeles State College

ROBINSON, MARY V. - Business
B.A., University of Iowa; M.Ed., University of California at Los Angeles

ROBINSON, W. DARIO - Lithography
University of California at Los Angeles

ROSE, BEA - Philosophy, Psychology
B.A., San Francisco State College; M.A., San Francisco Theological Seminary

SCHESSE, RUTH H. (Mrs.) - Nursing
A.B., Whittier College; R.N., San Bernardino Valley College;
M.A., Teachers College, Columbia University

SCHINDLER, RUTH H. (Mrs.) - Nursing
A.B., Whittier College; R.N., San Bernardino Valley College;
M.A., Teachers College, Columbia University
SHANNON, VIVIAN JOYCE (Mrs.) - - - - Music
B.A., M.A., University of California at Los Angeles

SHANNON, FLOYD E. - - - - Engineering, Drafting
B.A., Fresno State College

SLOTKIN, MARGARET (Mrs.) - - - - Hygiene
R.N., Edward J. Meyer Memorial Hospital; B.S., University of Buffalo

SMITH, MILLENT ANNE - - - - Business
B.A., M.A., Peabody College, Nashville, Tennessee

SMITH, PAUL V. - - - - Hygiene, Physical Education
B.A., M.A., New Mexico Highlands University

SMITH, ROBERT E. - - - - - - - - Art
B.A., Pomona College

STANDLEA, LESLIE H. - - - - Dean of Guidance
B.S., University of California at Berkeley;
M.S., University of Southern California

STARK, VESTA L. (Mrs.) - - - - Dental Assisting
University of California at Los Angeles;
Northern State Teachers College, Aberdeen, South Dakota

STARR, PHILIP C. - - - - Economics, English
B.S., Harvard University; M.A., University of California at Los Angeles

STRANE, RALPH - - - - - - - Drama, Speech
B.A., Pepperdine College; M.A., University of Oregon

SWIHART, DONALD D. - - - - Chemistry, Astronomy
B.A., La Verne College; M.A., Claremont Graduate School

TEITSWORTH, JUNE - - - Dean of Student Activities
B.E., M.S., University of California at Los Angeles

THEURER, HOWARD D. - Mathematics, Physical Education
B.S., University of California at Los Angeles

TOLSTOY, PETER - - - - Counseling, Hygiene
B.S., M.A., California State Polytechnic College

WALDROP, MARY L. (Mrs.) - - - - Home Economics
B.A., University of California at Berkeley;
M.A., Claremont Graduate School

WALDROP, OTIS STANLEY - - - - Psychology
A.B., University of North Carolina; M.A., New York University

WALKER, THOMAS M. - - - - - - English
B.A., M.Th., University of Southern California

WARGIN, DONALD C. - - - - Psychology, Sociology
B.A., University of Colorado

†WEAVER, JESSE H., JR. - - - - - - Speech, English
B.A., Oklahoma A. and M. College; M.A., University of Southern California

WEBB, RAY O. - - - - - - Drafting, Engineering
B.Ed., Illinois State Normal University; M.S., Oregon State College

WHITE, JACK L. - - - - - - Physics, Engineering
B.A., M.A., Stanford University

WIGNALL, REX W. - - - - - - Director
B.S., M.Ed., University of California at Berkeley

WRIGHT, DONALD J. - - - - - - - English
B.A., University of California at Los Angeles
<table>
<thead>
<tr>
<th>Name</th>
<th>Degree(s)</th>
<th>Major</th>
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<tr>
<td>APARICIO, REYNAルド</td>
<td>B.A., Claremont Men's College</td>
<td>Accounting</td>
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<tr>
<td>BLAIR, ELIZABETH A. (Mrs.)</td>
<td>B.A., University of California at Riverside</td>
<td>History</td>
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<tr>
<td>BRAHM, ROBERT D.</td>
<td>University of California at Los Angeles; Bryan A.F.B. College</td>
<td>Aeronautics</td>
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<tr>
<td>BRIDGES, FRED</td>
<td>B.A., LaVerne College; M.A., Claremont Graduate School</td>
<td>History</td>
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<tr>
<td>CAPPARELLI, EDWARD A.</td>
<td>B.A., Pepperdine College; M.S. in Ed., University of Southern California</td>
<td>History</td>
</tr>
<tr>
<td>CHRISTEN, MURIEL D. (Mrs.)</td>
<td>A.B., University of California at Berkeley</td>
<td>English</td>
</tr>
<tr>
<td>CROWLEY, LARRY</td>
<td>B.S., Brigham Young University, Provo, Utah</td>
<td>Bookkeeping</td>
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<td>CUNNISON, ROBERT S.</td>
<td>B.A., University of California at Berkeley</td>
<td>Business</td>
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<td>DARINGTON, CLAUDIA L. (Mrs.)</td>
<td>B.A., Whittier College; M.A., Claremont Graduate School</td>
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<td>DENTICE, ROBERT</td>
<td>B.S., Olivet Nazarene College, Kankakee, Illinois; M.S., University of Southern Mississippi</td>
<td>Aeronautics</td>
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<tr>
<td>DURKEE, ROBERT</td>
<td>B.A., University of Oklahoma; M.A., University of Southern California; M.S., Los Angeles State College</td>
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<td>FITZGERALD, RICHARD A. JR.</td>
<td>A.B., University of San Francisco; M.A., University of California at Riverside</td>
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<td>GEARY, RONALD G.</td>
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<td>GIFFORD, DUANE</td>
<td>B.S., University of California at Berkeley</td>
<td>Hydraulics</td>
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<tr>
<td>GREEN, FRANKLIN D.</td>
<td>B.A., M.S., University of Utah</td>
<td>Electronics, Mathematics</td>
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<tr>
<td>GREENBERG, IRA A.</td>
<td>B.A., University of Oklahoma; M.A., University of Southern California; M.S., Los Angeles State College</td>
<td>English</td>
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<td>HITE, ELDON E.</td>
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<td>Police Science</td>
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<tr>
<td>HUGHES, JOHN T.</td>
<td>L.L.B., St. Louis University</td>
<td>Real Estate</td>
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<tr>
<td>JONES, WORLEY C.</td>
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<tr>
<td>KOEHLER, CHARLES A.</td>
<td>A.B., Hillsdale College; M.P.A., University of Michigan; M.A., Northern Michigan College</td>
<td>Political Science</td>
</tr>
<tr>
<td>LYNCH, ALLEN</td>
<td>B.A., M.A., Gonzaga University, Spokane, Washington</td>
<td>Supervision</td>
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</table>
PART-TIME FACULTY

LYNCH, JAMES T. - - - - - - - - - - - - Business
B.S., M.S., Lehigh University

McDANIEL, JOHN - - - - - - - - - - - - Business
B.S., M.A., Long Beach State College

McFANN, JAMES - - - - - - - - - - - - Supervision

MARTINEZ, JOHN - - - - - - - - - - - - Spanish
B.A., Mexico City College

MIERAS, JAMES E. - - - - - - - - - - - - Real Estate
B.A., Occidental College

MITCHELL, EUGENE D. - - - - - - - - - - - - Business
B.A., M.A., University of Southern California

NORMAND, THOMAS J. - - - - - - - - - - - - Business
B.A., Los Angeles State College

PARRY, WILLIAM L. - - - - - - - - - - - - Police Science
B.A., University of California at Los Angeles

POMEROY, JOSEPH A. - - - - - - - - - - - - Spanish
B.A., M.A., University of California at Los Angeles; Certificado, University of Madrid

RILEY, JERRY - - - - - - - - - - - - Supervision
B.A., University of Southern California

ROELEN, MARJORIE - - - - - - - - - - - - Business
B.S., University of Nebraska

SAGOUSPE, ROGER H. - - - - - - - - - - - - Police Science
A.A., Chaffey College

SANTARELLI, TOBIAS F. - - - - - - - - - - - - Business
B.S., Indiana State College; M.Ed., University of Pittsburgh

SCHOCK, STANLEY - - - - - - - - - - - - Supervision
B.A., University of Hawaii

SELLERS, HERBERT D. - - - - - - - - - - - - Electricity
B.S., M.S., West Coast University, Los Angeles

SHORES, WILLIAM - - - - - - - - - - - - Welding
B.A., University of California at Santa Barbara; M.A., Long Beach State College

SIMMONS, C. RAY - - - - - - - - - - - - Electronics
B.S., Oklahoma A. and M.

SIMONSEN, WILLIAM R. - - - - - - - - - - - - Speech
A.B., San Diego State College; M.A., Claremont Graduate School

SPEER, SPENCER J. - - - - - - - - - - - - Supervision
B.S., Fairmont State College, Fairmont, West Virginia

STAMM, JAMES C. - - - - - - - - - - - - Supervision
B.A., College of Wooster; M.A. Ohio State University

SWONGER, CLAUDE L. - - - - - - - - - - - - Electronics
Los Angeles State College; University of California at Los Angeles

TANK, ROBERT G. - - - - - - - - - - - - Supervision
Ph.B., University of Wisconsin

TOLSTOY, ANDREE - - - - - - - - - - - - Art
B.A., Scripps College; M.A., Claremont Graduate School
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<tr>
<td>VELLIS, LEWIS J.</td>
<td>Drafting</td>
<td>B.A., University of California at Santa Barbara; M.S. in Ed., University of Southern California</td>
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<tr>
<td>WEED, EDWARD I.</td>
<td>Supervision</td>
<td>A.A., Chaffey College; Naval Reserve Officer School, Naval War College</td>
</tr>
<tr>
<td>WILSON, ENID H. (Mrs.)</td>
<td>Crafts for the Blind</td>
<td>B.A., Pomona College</td>
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<tr>
<td>WILSONCROFT, WILLIAM E.</td>
<td>Psychology</td>
<td>B.A., Muskingum College; M.A., Claremont Graduate School</td>
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<td>WOLFE, CLIFFORD T.</td>
<td>Supervision</td>
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**FACULTY EMERITUS**

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<tr>
<td>BLAKESLEE, FLORENCE (Mrs.)</td>
<td>Music</td>
<td>B.A., Pomona College</td>
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<tr>
<td>BLAKESLEE, S. EARLE</td>
<td>Music</td>
<td>B.M. B., University of Denver; B.A., Pomona College</td>
</tr>
<tr>
<td>BOOTH, CHARLES J.</td>
<td>Director</td>
<td>B.S., M.S., University of California</td>
</tr>
<tr>
<td>CLARK, PEARL E.</td>
<td>Dean of Students</td>
<td>B.A., M.A., University of Montana; Ph.D., University of Southern California</td>
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<tr>
<td>DYSART, RUSSELL D.</td>
<td>Geology, Mineralogy</td>
<td>B.A., Pomona College; M.A., University of Southern California</td>
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<tr>
<td>FLORY, VERA E. (Mrs.)</td>
<td>English</td>
<td>B.A., Pomona College; M.A., Northwestern University</td>
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<tr>
<td>FRANK, MARIE G. (Mrs.)</td>
<td>Home Economics</td>
<td>Chouinard Art School, Los Angeles; University of California at Los Angeles; University of Southern California</td>
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<tr>
<td>GATIGNOL, GILBERTE F.</td>
<td>French</td>
<td>B.A., New Mexico Normal University; Diplôme de Professeur de Français à l'Etranger, University of Paris; M.A., University of California</td>
</tr>
<tr>
<td>HILL, MERTON E.</td>
<td>Superintendent</td>
<td>B.S., Pomona College; A.M., Claremont Colleges; Ed.D., University of California</td>
</tr>
<tr>
<td>HORSCH, L. J.</td>
<td>Social Science</td>
<td>B.A., Bethel College, Newton, Kansas; M.A., Pomona College</td>
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<tr>
<td>JONES, M. G.</td>
<td>Social Science</td>
<td>B.A., University of Michigan; M.A., Columbia University</td>
</tr>
<tr>
<td>LUEBERS, EMMA O. (Mrs.)</td>
<td>Business</td>
<td>B.S., Maryville State Teachers College; M.A., University of Southern California</td>
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<tr>
<td>MATHER, WILEY W.</td>
<td>Social Science</td>
<td>B.A., Pomona College; M.A., Claremont Colleges</td>
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<tr>
<td>MERCHANT, HAROLD E.</td>
<td>Chemistry</td>
<td>B.A., M.A., Pomona College</td>
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<tr>
<td>NORMAN, ROSAMOND</td>
<td>English</td>
<td>B.A., Pomona College; M.A., Stanford University</td>
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<tr>
<td>PALMER, FRANK</td>
<td>English</td>
<td>B.A., Pomona College</td>
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</tbody>
</table>
PAYNE, CLARA (Mrs.) - - - - - - - - - - English
Wellesley College; Graduate in Music, Northwestern University;
M.A., Claremont Colleges

SNYDER, OLOF E. - - - - - - Dean of Instruction
B.S., University of California; M.A., Claremont Colleges

SNYDER, SHIRLEY (Mrs.) - - - - - - - - English
B.A., University of California

SPRING, GARDINER W. - - - - - - - - - - President
B.A., M.A., University of California; D.H., University of Southern California

STANFORD, MABEL - - - - - - - - Public Information
B.A., Pomona College; M.A., Stanford University

WADSWORTH, LEO A. - - - - - - - - Director
B.A., University of California; M.A., Claremont Graduate School

WILSON, FLOYD J. - - - - - - - - Anatomy, Zoology
B.S., Massachusetts Institute of Technology; M.A., University of California

WITHEY, HETTIE - - - - - - - - Social Science
B.A., M.A., Stanford University

Main entrance to College Library

16
HISTORY

Chaffey College is the culmination of eighty years of educational tradition in the Chaffey community. On March 17, 1883, the cornerstone was laid in Ontario for a private college known as Chaffey College of Agriculture of the University of Southern California. When the need for public rather than private education was recognized, the college closed in 1901 and its building was occupied by the new Ontario High School. In 1906 the legal separation of the Chaffey College Trust from the University of Southern California was completed. The Ontario High School district was enlarged and reorganized as Chaffey Union High School district in 1911, and became beneficiary of the College Trust. Chaffey Junior College of Agriculture was added in 1916 as a department of Chaffey Union High School.

In 1922 a separate Chaffey Junior College District was formed. New buildings to serve the needs of the college were added during the years that followed.

During World War II the College offered its facilities to Civil Service and military training units, operated a War Training Service flight school at Silver Lake, and increased its training facilities by the purchase of a large hangar at the Ontario International Airport.

An evening college and summer session were added to the program in 1953.

Recognizing the need for expanded facilities for the College, the citizens of the district passed a bond election in 1957 for the construction of a new campus. Alta Loma was chosen as the location, a new campus was constructed on a 200-acre tract, and the College moved in January 1960.

With a wealth of tradition and experience Chaffey College will continue to serve the community in this period of dynamic expansion.

PHILOSOPHY

Chaffey College, a two-year public junior college, is an educational and cultural center of the community. Because education is a life-long process of individual growth, the college programs are sufficiently flexible to provide training for full-time and part-time students, and to adjust to the special needs of mature persons of all ages. The guidance services help each student to gain a realistic understanding of himself in order to achieve his potential in a democratic society.

Seriousness of purpose, the importance of mastery, and the necessity of recognizing enduring values are stressed at Chaffey College. To this end Chaffey College believes in rigorous training and in the academic disciplines, general education, thorough and modernized occupational training, the value of the arts and artistic expression, democratic participation, and in moral and spiritual values as inherent in a college program.
FUNCTIONS

1. To provide lower division courses for students who plan to transfer to a four-year college or university.

2. To provide occupational courses for students who wish to gain competence in employable skills and for employed workers who wish to upgrade their skills, or move to another level of employment.

3. To provide general education for all students which will give them some awareness of that body of ideas and ideals that we think of as our cultural heritage, and which will contribute to their growth as individuals and strengthen their understanding of their responsibilities as members of a democratic society.

4. To provide educational and vocational counseling to help students to make informed decisions on their selection of vocations, their present study plans, and their educational objectives.

5. To provide remedial courses for students whose educational background is insufficient for them to benefit fully from the college programs offered.

6. To provide service for the people of the community by offering lectures, forums, plays, concerts, art exhibits, and other cultural activities.

THE CHAFFEY UNION JUNIOR COLLEGE DISTRICT, located in the west end of San Bernardino County, has an area of 222 square miles and includes two high school districts:

1. The Chaffey Union High School District has four operating high schools, Alta Loma, Chaffey, Montclair and Upland. The Chaffey Union High School District includes the elementary districts of Alta Loma, Cucamonga, Cucamonga Central, Etiwanda, Guasti, Mount Baldy, Mountain View, Ontario and Upland.

2. The Fontana Unified District has one high school.

The college is located at the approximate center of the college district at the north end of Haven Avenue in Alta Loma.

EVENING CLASSES — Many college courses are offered in the evening for the convenience of employed persons. A number of courses in specialized fields are also included in the evening program. Day students may include evening classes as a part of their total programs.

SUMMER SESSION — Many semester courses are offered in the six-week summer session. Classes are scheduled in the morning and in the evening, and meet Monday through Friday. Classes in Aeronautics are scheduled for eight weeks.
ADMINISTRATION BUILDING

The Administration Building is at the front of the campus facing Haven Avenue on the semicircular drive, Olive Way.

ADMINISTRATION BUILDING DIRECTORY

Office of the President - - Room 1
Office of the Comptroller - - Room 4
Office of the Director - - Room 19
Guidance Center - - Room 14
  Dean of Admissions and Records - - Room 25-C
  Dean of Guidance - - Room 14-G
  Counselors - - Room 14
Student Activities - - Room 15
  Dean of Student Activities - - Room 15-B
  Coordinator of Student Activities - - Room 15-C
  Placement Secretary - - Room 15-D
Office of Instruction - - Room 23
  Dean of Instruction - - Room 23-C
  Dean of the Evening College - - Room 23-B

LIBRARY

The College Library is open from 7:45 a.m. until 4:30 p.m. and 6:30 p.m. until 10:00 p.m. Monday through Thursday, and from 7:45 a.m. until 4:30 p.m. on Friday. The main reading room seats 100. Opening off this reading room is a large conference room seating 30, a typing room for students, and the Chaffey Historical Alcove. The Library’s collection of 24,000 volumes is shelved in open book stacks accessible to students. A one-story wing opening off the main entrance lobby houses an audio-visual room, a large lecture room seating 100, and the library workroom.

The reserve books and the periodical collection of some 300 different periodicals currently received by the Library are housed on the mezzanine. Also available for student use on this level are a microfilm reader and individual study carrels.

CAMPUS CENTER

The Campus Center is open day and night during school hours. The colorful dining room is used for cafeteria meals and also for college dances and other student activities. Opening off the central patio are the Student Body office, the student store, a snack-bar, and the health center. The building also provides a student lounge, and a staff lounge and dining room.

The Health Center is located in the Campus Center building. A registered nurse is on duty to give first aid for accidents and to help students who become ill while at school.

Students who have been absent because of illness must file a “verification of illness” report with the Health Center within 5 days after returning to school.
FACILITIES

GYMNASIUM

The 90x116 playing floor with a present spectator seating capacity of 1000 and a future capacity of 2000 is the center of physical education activities. The upper level provides a dance room and a large exercise and wrestling area.

The building is planned for use by both men and women students. The women's office, dressing rooms, and a classroom are located on the west side of the building. On the east side are the men's offices, quarters for athletic teams and physical education classes, and a classroom. The diving and swimming pools are just south of the gymnasium building.

Adjacent to the gymnasium are 8 tennis courts, the football field and track, which will become the stadium, the baseball field, playing courts, and a playing field for women's physical education and athletic activities.

CLASSROOMS, LABORATORIES, AND SHOPS

Business Education Building
Library
Social Science Building
Language Arts Building
Creative Arts Group
  Art Building
  Home Economics Building
Theatre Building
  Little Theatre seating 350
  Music
  Speech, Drama
Physical Science Building
  Chemistry
  Drafting
  Engineering
  Mathematics
  Physics
Life Science Building
  Dental Assisting
  Life Science
  Nursing
Electronics Building
  Electronics
  Lithography
Aeronautics Building
  Engine Shop
Chaffey College Hangar at the Ontario International Airport
  Airplane Shop
  Jet Engine Shop
  Welding Shop
Procedures
ADMISSION REQUIREMENTS

Admission Requirements and Procedures

I. REQUIREMENTS:

A. RESIDENCE:

1. Legal residence in the Chaffey Union Junior College District

2. Legal residence in an area in California not in a junior college district. Students living in several areas adjacent to the Chaffey College district are eligible to attend.

3. Some out-of-state students will be admitted, depending on their high-school records and their future goals. California state law requires the payment of an out-of-state tuition fee based on the number of units the student is taking.

B. EDUCATIONAL PREPARATION:

1. High-school graduation

2. If a non-high-school graduate, the student must be
   a. a veteran, 18 years of age or more with at least 90 days active duty,
   or
   b. nineteen years of age before August 31 for entrance in fall semester (before January 31 for entrance in the spring semester), and have been out of school at least one semester
   or
   married on or before August 31 for fall semester (before January 31 for spring semester), and must achieve a satisfactory score on placement tests, and be judged a likely candidate for success in college work.

3. Some high-school seniors may be admitted to a part-time program if the high-school principal and counselor recommend such a combination program.

4. Students having had college work elsewhere are accepted:
   a. if the student has not been disqualified from another college, and
   b. if the student has grades which would not disqualify him at Chaffey College.
II. PROCEduRES:

A. Students who are candidates for an A.A. or A.S. Degree and/or plan to transfer to any other collegiate institution are admitted to Chaffey College when they complete the following procedure before registering:

1. Take the Chaffey College placement tests (or transfer more than 30 units from another college).
2. File an application for admission.
3. Have a transcript of record sent to the Office of Admissions from last high school attended and from all colleges attended.
4. Purchase a student body card, or obtain a clearance.
5. File polio immunization form (if required).

B. All other students are admitted when they complete items 4 and 5 above before registering.

* Students over 21 carrying 12 units or more, and students under 21 carrying more than 6 units in evening classes must complete all 5 items above.

PLACEMENT TESTS — Placement tests, which take about 3 hours, are required of all new students preceding enrollment.* The scores obtained are used by the counselor to aid the student in choosing his field of study and type of course. Vocational interest and aptitude tests are given to those who desire them.

Schedule of Placement Tests for Fall Semester, 1964:

- Tuesday, March 17, 1964 at 6:30 p.m.
- Tuesday, March 31, 1964 at 6:30 p.m.
- Saturday, April 4, 1964 at 8:30 a.m.
- Monday, April 13, 1964 at 6:30 p.m.
- Tuesday, April 21, 1964 at 6:30 p.m.
- Tuesday, May 5, 1964 at 6:30 p.m.
- Saturday, May 16, 1964 at 8:30 a.m.
- Monday, May 25, 1964 at 6:30 p.m.
- Saturday, June 6, 1964 at 8:30 a.m.
- Monday, June 15, 1964 at 8:30 a.m.
- Wednesday, July 15, 1964 at 8:30 a.m.
- Saturday, August 8, 1964 at 8:30 a.m.
- Thursday, August 20, 1964 at 6:30 p.m.
- Wednesday, September 2, 1964 at 8:30 a.m.

Schedule of Placement Tests for Spring Semester, 1965:

- Thursday, December 3, 1964 at 6:30 p.m.
- Tuesday, January 5, 1965 at 6:30 p.m.
- Saturday, January 16, 1965 at 8:30 a.m.
- Tuesday, January 19, 1965 at 6:30 p.m.
- Saturday, January 23, 1965 at 8:30 a.m.

* Placement tests are not required of students taking 6 units or less, nor of students transferring from another college with 30 units or more.
ESTIMATED EXPENSES FOR A YEAR AT CHAFFEY COLLEGE FOR FULL-TIME STUDENTS

(Based on November 1963 figures)

Incident ial Expenses

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<tr>
<td>Books*</td>
<td>$60.00</td>
<td>$85.00</td>
<td>$120.00</td>
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<tr>
<td>Supplies**</td>
<td>20.00</td>
<td>30.00</td>
<td>40.00</td>
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<td>Student Body Card</td>
<td>16.00</td>
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<tr>
<td>Student Activities</td>
<td>—</td>
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<tr>
<td>Total</td>
<td>$96.00</td>
<td>$151.00</td>
<td>$206.00</td>
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*Some savings can be effected by reselling to the bookstore texts which will be used again in the course.

**Special supplies are usually required in the following courses: Aeronautics, Art, Ceramics, Chemistry, Drafting, Filing, Accounting, Bookkeeping, and Electronics.

Living Accommodations

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<tr>
<td>Room only</td>
<td>$28.00</td>
<td>$35.00</td>
<td>$45.00</td>
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<tr>
<td>Room with kitchen privileges</td>
<td>35.00</td>
<td>40.00</td>
<td>45.00</td>
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<tr>
<td>Room and board</td>
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<tr>
<td>(2 meals per weekday)</td>
<td>70.00</td>
<td>80.00</td>
<td>85.00</td>
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Chaffey College maintains housing lists which may be obtained in the Office of Student Activities, Administration Building, Room 23.

Transportation

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<td>$25.00</td>
<td>$40.00</td>
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The college operates free bus service to district areas and to Chino, Corona, and Claremont. Students driving their own cars will spend according to the distance traveled and the number of students sharing the ride.

Noon Lunches

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<td>$8.00</td>
<td>$15.00</td>
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The college operates a complete cafeteria and snack bar for noon lunches and provides eating areas for students who bring sack lunches.

ESTIMATE OF TOTAL EXPENSES FOR A YEAR — These figures do not include cost of clothing or recreational expenses.

<table>
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<tr>
<td>Students living at home</td>
<td>$150.00</td>
<td>$225.00</td>
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<tr>
<td>Students living away from home</td>
<td>700.00</td>
<td>1,100.00</td>
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GUIDANCE

Guidance and Counseling

Guidance and counseling is available to all regular and part-time students through trained counselors. Each regular student is assigned a counselor who helps the student with his educational objectives, course selections, plans for transfer, employment opportunities, and personal adjustment in a college environment. Counselors' offices are located in the Administration Building.

Guidance begins with the first interview, at the time of registration. Every entering student is given tests widely used in industry and educational institutions to assist in determining educational and vocational placement.

In addition to counselors, all members of the faculty maintain office hours for their students and act in some capacity as advisors. Students are urged to seek out those faculty members who are teaching in the student's field of major interest.

Orientation assemblies, required of all new students, help the students to understand Chaffey College policies and practices.

Guidance also has its place in the course offerings at Chaffey. Psychology classes, especially planned to assist in study techniques, personality growth and college adjustment, are a part of the curriculum, as are courses in the problems of marriage and the family.

Vocational guidance is a natural function in departments offering courses which prepare for immediate employment. Counselors teach courses in educational and vocational planning for those who desire them.

Through special-interest meetings, and the many pre-professional and vocational-interest clubs active on the campus, Chaffey students are afforded additional opportunity to explore the careers open to them.

STUDY LOAD REGULATIONS — An average of 16 units each semester is necessary for a student to progress at a normal rate. A full-time student must carry from 12 to 17 units each semester. Petitions for exception to the rule may be made to the Office of Guidance. Students in the regular Aeronautics program must carry a full-time student load.

Each student must take physical education each semester unless he is 25 years of age, or has completed four semesters, or has a doctor’s excuse, or is taking fewer than nine units of work.

ADMISSION TO ADVANCED STANDING — Credit for previous educational experiences of college grade taken in accredited colleges or in college-level USAFI courses will normally be evaluated at full unit value. Work completed in unaccredited collegiate institutions and service schools will be evaluated on an individual basis. Credit for military service, if the service was during a state of emergency, and credit for service courses may be granted upon petition to the Dean of Admissions when the student is preparing to graduate.
GRADUATION REQUIREMENTS

GRADUATION REQUIREMENTS — The requirements for graduation with the degree of Associate in Arts or Associate in Science are specified by the State Board of Education and the Chaffey Board of Trustees.

I. UNIT AND SUBJECT REQUIREMENTS FOR GRADUATION:

   Hygiene 1 (Healthful Living) .............................................. 2 units
   Physical Education .......................................................... 2 units
   (required of all students under 25 years of age)
   History and Government ................................................. 5 or 6 units
   A. History 2 or 57 and
      Political Science 2 or 57 or 1a
      or
   B. History 17a and 17b
   English and Speech ....................................................... 6 or 7 units

   *A major of at least ..................................................... 20 units
   Total needed for graduation ........................................... 64 units

II. SCHOLARSHIP REQUIREMENTS FOR GRADUATION:

   A minimum G.P.A. (grade point average) of 2.0 in all units attempted at Chaffey College and an overall G.P.A. of 2.0 for all college units attempted. (2.0 G.P.A. means a C average.)

III. RESIDENCE REQUIREMENTS FOR GRADUATION:

   The last 12 units immediately prior to graduation must be taken at Chaffey College. An exception may be made for the student who has completed a total of 58 units at Chaffey College.

IV. APPLICATION FOR GRADUATION:

   At the time of completing the graduation check with a counselor, the student will officially apply for graduation.

V. PARTICIPATION in the annual Commencement Exercises of the college.

   *A major for graduation includes 20 or more units in one division as follows:

I. GENERAL MAJOR:
   Any 20 units in one area.

II. COLLEGE TRANSFER MAJOR:
   30 units breadth requirements for the University of California
   or
   40 units general education requirements for a California state college.

III. DEPARTMENT MAJORS:

   1. Aeronautics: 20 units of aeronautics for either the "A" or "E" license.
   3. Art: 12 units from Art 1a, 1b; Art 2a, 2b; Art 3a, 3b plus 8 or more units from the area of painting or ceramics.

27
GRADUATION REQUIREMENTS

4. Business: See "Occupational Programs" in this catalog.
5. Dental Assisting: 31 units of dental assisting.
7. Engineering Aide: Option in one of 3 areas:
   (a) Chemical Technician - 14 to 19 units in chemistry, Physics 10, 11 and Math A, C and 53a or equivalents.
   (b) Drafting Technician - 6 to 13 units in drafting, math courses through trigonometry. Courses prescribed in option to bring to 20 units.
   (c) Survey Technician - 8 units in Drafting 1a, 1b; 51a, 51b.
       Eight units in Engineering 1a, 1b and 25a. Geology 1a and mathematics through trigonometry.
8. Fine Arts: 12 units or more in art or music or drama plus 8 units in either of the other two areas or History 4a, 4b.
9. Home Economics: 18 or more units of home economics plus 3 units in art.
10. Humanities: 18 or more units from English 5a, 5b or English 36a, 36b and History 4a, 4b and Philosophy 6a, 6b, plus additional units in art or music.
11. Journalism: 16 units including English 2a,b,c,d, plus 6 additional units in Journalism 57a,b,c,d, and/or speech.
12. Language Arts: One of these:
    (a) 20 units of English including English 5a, 5b or English 36a, 36b.
    (b) 12 or more units of English plus not more than 8 units of art, music or drama.
    (c) 12 or more units of English plus not more than 8 units of speech.
    (d) 12 or more units of the same foreign language plus not more than 8 units in English, art, music or drama.
    (e) 14 or more units of drama (including English 34e) and speech, plus not more than 6 units of art or music.
13. Life Science: 14 or more units of life science plus not more than 6 units in physics, chemistry or mathematics.
14. Lithography: 18 or more units of lithography plus 3 units in English and typing competency.
15. Mathematics: 20 units in mathematics and physical science. Must include at least 12 units of mathematics.
16. Music: 20 units in music courses distributed as follows:
    (a) 8 units from Music 1a, 1b and Music 21a, 21b.
    (b) 6 units from Music 2a, 2b; Music 27a, 27b.
    (c) 6 units from performance courses: Music 8, 9, 16, 18, 19, 20 or 46.
17. Physical Science: 20 units in physical science and mathematics. Must include at least 12 units of physical science.
18. Police Science: 17 or more units in police science plus 3 units from Psychology 1a, Sociology 1a or 1b or 2.
19. Professional Nursing: 37 units of nursing from courses 1-7.
20. Social Science: 20 units of social science including two one-year courses.
21. Supervision: 20 units from the courses in supervision including Supervision 51, 55, Psychology 52, 53, and English 61.
22. Vocational Nursing: 46 units of vocational nursing.

§Transfer students should also meet departmental requirement of the institution to which they plan to transfer. In no case can courses listed in the 90 series be included in the major.

HIGH-SCHOOL GRADUATION — A non-high-school graduate may choose to transfer college units to high school to satisfy the high-school graduation requirements. He should check his requirements with the Office of Admissions immediately upon entering, and file an application with the Office of Admissions when the courses are completed.

CLASSIFICATION OF STUDENTS — Students are classified as follows:
Freshman—earned fewer than 30 units
Sophomore—earned 30 units or more
Full time—enrolled for 12 or more units
Part time—enrolled for 11 1/2 units or fewer
Adult—a person 21 years old or older and enrolled in fewer than 10 class hours per week.

UNIT OF CREDIT — The California State Education Code defines a college unit as approximately one hour of class plus two hours of study per week, or three hours of laboratory per week carried through one semester. The terms "semester hour" or "credit" are sometimes used for the term "unit."

VETERANS — All veterans and war orphans should contact the veterans' adviser as soon as programming is complete to see that all necessary papers are in order. Veterans are treated the same as all other students in regard to attendance and scholarship. Each veteran should realize, however, that if he is to receive benefits, he must establish a major and follow a program that will lead to that objective. Frequent counseling is advised.

LATE REGISTRATION:
1. A registered student who is absent from the first meeting of a class will be dropped from the class. He may apply for late registration during the first week of classes, but it is possible that he may not be permitted to register for the same sections if the classes are closed.
2. A student who is not registered by the date for close of registration shown in the calendar may apply for late registration during the first week of classes, but his programming will be limited to classes that are still open.
3. Students who register late must make arrangements, satisfactory to their teachers, to make up the work missed.
ATTENDANCE REGULATIONS

ATTENDANCE — Each student is expected to attend every meeting of every class in which he is enrolled. Unexcused absences (cuts) are not allowed.

PHYSICAL EDUCATION — The California state law and/or Chaffey College regulations require that every student attend a physical education activities class each semester. Exemption from this requirement may be granted for the following reasons only:
1. Physical disability, requiring doctor's excuse.
2. Age twenty-five years or over.
3. Completion of four consecutive semesters of P.E.
4. Enrollment in fewer than 9 units.
5. Enrollment in evening classes only.

ABSENCE BECAUSE OF ILLNESS — A student who has been absent because of illness must file a "verification of illness" report with the Health Center within 5 days after returning to school.

ABSENCE FOR A REASON OTHER THAN ILLNESS — In case of absence, the student will inform his instructor immediately upon his return to class of the reason for the absence.

WORK MISSED BECAUSE OF ABSENCE — The student is responsible for the completion of all assigned class work whether he is present or not. The teacher may give partial credit or no credit for make-up assignments.

EXCESSIVE ABSENCE — A student will be dropped from a class from which he has been absent for the number of times that the class meets in two weeks. Absences for illness are included in this rule, but absences for transfer of attendance to authorized activities are excluded. A student who has been dropped for excessive absence may petition for a review of his case. If he is reinstated, he may be placed on probation.

PROGRAM CHANGES — A student who wishes to change his program must secure approval from his counselor.
1. A student may add to his program only during the first week of the semester.
2. A course may be dropped officially with a grade of W until Friday of the seventh week. After this date, the student will receive an F. The student may petition for an exception to the rule. In considering a petition, the committee will use two criteria: (1) The quality of the work to date; (2) Circumstances which have changed since Friday of the seventh week.
   Students who are dropped from classes for non-attendance and students who drop classes without official action will be graded as follows:
   WF grade for drops up to and including Friday of the seventh week.
   F grade for drops after Friday of the seventh week.

AUDITING CLASSES — No auditors are permitted.
WITHDRAWAL FROM SCHOOL — The term "withdrawal" refers to leaving the school and should not be used to mean dropping or discontinuing a specific class. If for any reason the student finds it necessary to withdraw from the college, he should make absolutely certain that his withdrawal is recorded as official and that he is granted an official withdrawal. Date limitations are shown in the calendar in this catalog.

A student who withdraws from school without making proper arrangements will receive WU, WF or F grades depending on the circumstances.

REPETITION OF COURSES—A course in which an A, B or C grade has been received may not be repeated.

A course in which a D grade has been received may be repeated. No units are earned, but the grade and the grade points earned will be recorded. Both the original course and the repeated course count as units attempted in computing grade point average.

A course in which an F grade has been received may be repeated for full credit and grade. Both the original course and the repeated course count as units attempted in computing grade point average.

Students who accept advanced placement in a subject field may not take a less advanced course in the same field at a later date.

NOTICES OF UNSATISFACTORY WORK — Notices signifying unsatisfactory work (D or F grades) are distributed to students after the mid-term examinations. The student should consult with his instructor and his counselor following the receipt of such a notice.

FINAL EXAMINATIONS—Final examinations are held in a special period at the close of each semester. The normal period for each examination is two or three hours. Absence from the final examination results in a grade of F. A student may petition requesting that an exception be made in his case, and permission be given to make arrangements for a make-up final examination. The petition may be approved if

(1) the student can show a doctor's statement certifying a major illness

or

(2) the reason for absence is approved by the administrative committee.

Instructors are not authorized to make exceptions for absence from final examinations. The Office of Admissions and Records will request instructors to give make-up final examinations to those whose petitions have been approved.

CODE OF CONDUCT — Chaffey College through its student organizations, faculty, and administration has developed a code of conduct as a guide and criterion for student behavior on campus. This code allows much freedom of behavior, but demands responsibility on the part of each student for his own behavior. Copies of the code are made available to the student through his counselor, the Student Activities Office, or the Student Council Office.
COLLEGE REGULATIONS

GRADES AND GRADE POINTS

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
<th>Grade Points per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Excellent</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>Good</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>Average</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>Passing</td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td>Failed</td>
<td>0</td>
</tr>
</tbody>
</table>

The F grade may indicate that a student has:
1. Failed a course, or
2. Dropped a course after Friday of the seventh week, or withdrawn after the fifteenth week of the semester.

W—0 grade points. 0 units attempted.
The student dropped or withdrew officially before Friday of the seventh week.

WU—0 grade points. 0 units attempted.
The student unofficially withdrew or was withdrawn from all classes because of non-attendance up to Friday of the seventh week, or student withdrew unofficially before Monday of the sixteenth week with a passing grade at the time of withdrawal.

WP—0 grade points. 0 units attempted.
The student officially withdrew from school after Friday of the seventh week and before Monday of the sixteenth week with a passing grade on the date of withdrawal. (Date of withdrawal is the date of last attendance in a class.)

WF—0 grade points for each unit.
1. The student dropped a class unofficially or was dropped by the instructor for excessive absences up to Friday of the seventh week.
2. The student withdrew, officially or unofficially, from all classes after Friday of the seventh week and before Monday of the sixteenth week with a failing grade at the date of withdrawal. (Date of withdrawal is the date of last attendance in a class.)

The following chart shows the various grades earned throughout the semester:

<table>
<thead>
<tr>
<th>Week of Semester</th>
<th>DROPPED (a class)</th>
<th>WITHDREW (all classes)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Officially</td>
<td>Unofficially</td>
</tr>
<tr>
<td>Up through Friday of seventh week</td>
<td>W</td>
<td>WF</td>
</tr>
<tr>
<td>After Friday of seventh week to</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td>Monday of sixteenth week</td>
<td>WP (if passing)</td>
<td>WF (if passing)</td>
</tr>
<tr>
<td>Monday of sixteenth week to end</td>
<td>F</td>
<td>F</td>
</tr>
</tbody>
</table>
I—Incomplete
An I grade is given to a student who because of circumstances beyond his control was unable to complete a course. The I grade must be made up during the next semester of attendance (but not more than five years later) or the grade automatically becomes an F.

PROBATION
Probation is a trial period for students who are unsatisfactory in some aspect of college work or responsibility. Students on probation should realize that they must bring their performance in all aspects of college work up to standard or they will be disqualified from attending. The conditions under which students are placed on probation are listed below.

1. Scholastic Deficiencies:
   (a) Entering students may be placed on probation if their high-school grades and/or placement test scores are low. The background and preparation of non-high-school graduates are carefully evaluated.
   (b) Students whose semester grade point average is below 1.50 at the end of any semester will be placed on probation. ("WF" grades are counted as "F's" in computing grade point average.)
   (c) Students who have received "WU" grades in 50% or more of the units for which they enrolled will be placed on probation.
   (d) Students who re-enter after being out of school for a semester or more following disqualification will be placed on probation.

2. Behavior Requiring Disciplinary Action:
Students will be placed on probation or disqualified who break the College Code in such matters as cheating, theft, immoral conduct, reckless driving on campus, failure to recompense the Library for lost or overdue books or to pay breakage fees, failure to keep contracts, playing cards on campus, bringing liquor on campus or to campus activities, or for other behavior detrimental to the welfare of the college.

DISQUALIFICATION
Disqualification is the denial to students of the privilege of attending the college. Disqualification is generally for one semester unless the Admissions Committee makes an exception to admit a student on special probation. Students who have been disqualified twice are not eligible for readmission except by special petition. Such petitions will not be considered until a full year or more has passed since the student was disqualified the second time.
A student shall be disqualified for the remainder of a semester if he earns probation for any reason during a time when he is already in probationary status.
Students shall be disqualified for the next semester who:
(1) Have not earned passing grades in half the units attempted in the semester just completed.
(2) Have earned probation for two consecutive semesters.
SUSPENSION

Any college administrator may suspend a student. Reasons for suspension include behavior requiring disciplinary action, non-attendance, or any reason that requires prompt action to solve serious problems. The purpose of suspension is to remove the student from class and/or the campus until proper disciplinary action can be determined after a complete investigation of the misconduct or the other circumstances which required suspension.

DISMISSAL FROM CLASS

Students may be dismissed from classes by teachers for excessive absence, for serious lack of academic effort, or for unsatisfactory citizenship.
Activities and Awards
Box social auction

Drama Make-up

Chess tournament
STUDENT ACTIVITIES

Student Activities

THE ASSOCIATED STUDENTS OF CHAFFEY COLLEGE are delegated the responsibility for athletics, convocations, rallies, clubs, socials, the yearbook and the weekly newspaper. The governing board of The Associated Students of Chaffey College is a student council which includes the following:

Elective Officers: Appointive Officers:
President Publicity Chairman
Vice President Athletic Chairman
Secretary Assembly Chairman
Rally Chairman Corresponding Secretary
Social Chairman Editor of Argus

Editor of Chaffey Collegiate Press

Presidents of Major Organizations within the Student Body:
Inter-Club Council President
Associated Men Students President
Associated Women Students President
Freshman Class President
Sophomore Class President

STUDENT BODY OFFICE ELIGIBILITY REGULATIONS

All officers of the Associated Students must be members of the Associated Student Body of Chaffey College and be carrying a minimum of ten units of work exclusive of P.E. Listed below are the minimum requirements for eligibility for the various offices and also the minimum which the incumbents must maintain in order to retain their offices:

<table>
<thead>
<tr>
<th>Office</th>
<th>Grade Point Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective offices of the Associated Students</td>
<td>2.5</td>
</tr>
<tr>
<td>Appointive offices of the Associated Students</td>
<td>2.3</td>
</tr>
<tr>
<td>AMS President</td>
<td>2.5</td>
</tr>
<tr>
<td>Other offices of AMS</td>
<td>2.3</td>
</tr>
<tr>
<td>AWS President</td>
<td>2.5</td>
</tr>
<tr>
<td>Other offices of AWS</td>
<td>2.0</td>
</tr>
<tr>
<td>Class Presidents</td>
<td>2.5</td>
</tr>
<tr>
<td>Other class officers</td>
<td>2.0</td>
</tr>
<tr>
<td>Inter-Club Council President</td>
<td>2.5</td>
</tr>
<tr>
<td>Other offices of ICC</td>
<td>2.0</td>
</tr>
</tbody>
</table>
THE ASSOCIATED STUDENT BODY CARD—Each year the Associated Students vote their own dues and adopt their own budget. Under this cooperative method of assessment the Student Body is able to finance many segments of the Student Government program and its special services that otherwise would not be possible. The Associated Students have voted to assess regular students $16.00 yearly. Other students customarily purchase one of the special Student Body Cards. The college makes every effort to assist students with financial problems to obtain a Student Body Card without incurring a financial hardship.

The Student Body Card which the student receives upon payment of the assessment entitles the holder to the following:

1. Admission to Chaffey College athletic events.
2. Subscription to the campus newspaper, *Chaffey Collegiate Press*.
3. Subscription to the college yearbook, the *Argus*.
4. Student rates to certain public events.
6. Free or reduced admission to all student-body-sponsored activities.
7. Accident insurance while participating in any official school-approved activities.
8. The right to vote in all student elections.
9. The right to hold office.
10. The right to participate in athletics.
11. Such other benefits as may be decided by the Student Council.

Two-dollar Student Body cards ($1.50 cards for second semester) are available to students who are:

1. Carrying fewer than 10 units, or
2. 25 years of age or older, or
3. Taking only evening classes.

This card entitles the holder to the following benefits:

1. Free admission to all home athletic events where regular ASB cards are honored.
2. Reduced rates at all ASB social events and drama productions.
3. Use of the Campus Center.
4. School newspaper.
5. Special accident insurance with extra payment.

Exceptions:

1. No *Argus* will be received
2. No insurance coverage (except with extra payment).
3. No athletic participation.
4. No right to hold an office and vote.
5. No free admissions to games off campus.
STUDENT ACTIVITIES

A.S.B. CARD REFUNDS—

$16.00 Cards (good for entire year)
- Did not enter (must request refund by Sept. 15) .................. $14.00
- Request for refund received before Nov. 1 ......................... 10.00
- November 1 to January 1 .................................................. 5.00
- First month of second semester ........................................... 2.00

$8.00 Cards (good for spring semester only)
- Did not enter ........................................................................ $6.00
- Beginning of second semester to March 1 ............................... 4.00
  (The Argus yearbook is not included in second-semester ASB Cards.)

No refunds:
- After March 1 on $16.00 cards
- At any time on $2.00 or $1.50 cards

THE ASSOCIATED MEN STUDENTS includes all the men students on campus. Its purpose is to promote interest in and give service to student activities. In addition, there are activities which are initiated and sponsored by this organization, such as a dance in the fall and sports events between students and faculty near the close of each semester. All men students are urged to take an active part in this organization.

THE ASSOCIATED WOMEN STUDENTS—Women's activities are planned and organized by the Associated Women Students. This group works toward the fostering of a friendly atmosphere among the women on campus. Social activities, service projects, and orientation activities highlight its program. All women belong to this organization and should plan to participate in its activities.

THE INTER CLUB COUNCIL—This body consists of one representative from each club on campus and has as its primary purpose the coordination of inter-club activities. It is also helpful to new clubs trying to organize and recommends them to the Director of the college for a charter.

CLUBS AND ORGANIZATIONS—Over twenty-five different clubs and organizations are active on the campus. Some are professional or vocational; some are recreational, cultural or service. Several are affiliated with state and national student organizations. An interested student can always find some type of club or group activity in which he can engage with profit to himself and others.

STUDENT PUBLICATIONS:

Chaffey Collegiate Press—A weekly newspaper of college affairs written and edited by journalism students in English 2.

Argus—The Chaffey yearbook prepared and edited by students of Journalism 57.

Panther Patter—A student handbook.

Chaffey Coed—A handbook for women students prepared by AWS.
STUDENT SERVICES

ATHLETIC ELIGIBILITY—Chaffey is a member of the Eastern Conference of the California Junior College Association. Intercollegiate athletic competition is governed by the Eastern Conference and the California State Junior College Athletic Code. Athletic eligibility may be determined by consulting the Athletic Director or the Coordinator of Student Activities.

SPECIAL SERVICES FOR STUDENTS

A number of special services designed to assist students with special problems and needs are available to students at Chaffey College. These services include:

HEALTH CENTER—A health center is maintained in Room 4 of the Campus Center. The center is staffed by a Registered Nurse who is available for health counseling, vision and hearing tests, and any first aid emergencies that may arise.

STUDENT INSURANCE—All regular ASB card holders are insured against accidental injuries which may occur while on campus during school hours or while attending an official college activity. In addition to this, all ASB card holders may, for a relatively small fee, purchase 24-hour health and accident insurance. Information regarding the insurance may be obtained from the Student Activities Office, Adm. 15.

STUDENT LOANS—See Index under "Financial Assistance."

STUDENT HOUSING—Chaffey College assumes no responsibility for the inspection or approval of student housing. As a service to students, the Student Activities Office, Adm. 15, maintains a file of available housing to be found in the nearby communities. Listings include room and board, rooms only, rooms with kitchen privileges, apartments, and opportunities to work for free room and board. Addresses and rental rates may be obtained by consulting the file in the Student Activities Office.

TRANSPORTATION—Free bus transportation to and from school is available to students in the Chaffey District living more than two miles from the campus, and also to students living in Corona, Chino, or Claremont.

EMPLOYMENT—Chaffey College maintains a Placement Bureau for assisting students in finding part-time employment in the surrounding communities. Students interested in obtaining part-time employment should register with the Placement Secretary in the Student Activities Office, Adm. 15.

SCHOLARSHIP INFORMATION—Information regarding availability of and application procedures for scholarships to four-year colleges and universities may be obtained in the Student Activities Office, Adm. 15. For additional information see "Financial Assistance" in the Index.
Honors and Awards

Chaffey College recognizes scholastic achievement, leadership, service, and character through a variety of honors and awards. The majority of these are sponsored by the college and campus organizations. However, a number are made possible by community organizations and interested citizens.

HONORS

SCHOLASTIC HONORS LISTS — Each semester two scholastic honors lists are prepared:
1. Dean’s Honor List — Students maintaining a B average or better in 12 or more units.
2. Special Recognition List — Part-time students carrying 6 to 11 units and maintaining a B average or better.

ALPHA GAMMA SIGMA (Beta Chapter of the California Junior College Honor Scholarship Society) — Students are expected to assess their own records and initiate an application for membership no later than October 1 (fall semester) or March 1 (spring semester). Application blanks may be obtained from the Office of Admissions and Records, Administration Building, Room 14. Final decision on eligibility is made by the Scholarship Committee; membership is not automatic.

A. Requirements for temporary membership:
1. No grade less than C.
2. 12 or more units, excluding Physical Education.
3. Grade point average of 3.0 or better.
4. At least 46 grade points.

B. Associate Membership:
Entering freshmen who were life members of the California Scholarship Federation upon graduation from high school may apply for associate membership in Alpha Gamma Sigma.

C. Requirements for permanent membership:
1. A total of 200 grade points, exclusive of Physical Education.
2. Overall grade point average of at least 3.3.
3. No grade less than C, including Physical Education.
4. Temporary membership for three semesters, including the one immediately preceding graduation.
   A student who has not been a temporary member three times may still achieve permanent membership if he has a grade point average of 3.5 or above at graduation. Among the advantages of permanent membership are certain scholarships which are available only to permanent members of Alpha Gamma Sigma. (See section on “Scholarships.”)

GRADUATION WITH HONORS—All graduating permanent members of Alpha Gamma Sigma are regarded as graduating with honors. The Scholarship Committee may also confer honors at graduation on other students whose scholastic record is outstanding, even though they do not meet the technical requirements of Alpha Gamma Sigma.
DIVISIONAL HONORS AT GRADUATION—There are a number of honors and awards bestowed through the various instructional divisions at commencement upon graduating students who have done outstanding work in their major field of study. These honors are determined by each division to recognize high academic standards and special achievement on the part of the student.

TAU EPSILON PI—Each year, during the second semester, distinguished sophomore women will be elected to Tau Epsilon Pi, which is sponsored by the Associated Women Students. Membership is based upon character, scholarship, and leadership of the women while they have been students at Chaffey College. Women must have a minimum of 30 units of work, at least 12 of which must have been carried the previous semester, with a grade point average of 2.5 in order to be eligible. Leadership is determined by a point system based on the activities in which the women have participated. Character fitness is determined by a committee of students and faculty members. Not more than 12 women or 10% of those having 30 units may be elected to membership. New members are announced during the spring semester.

AWARDS

CHAFFEY "C" AWARDS—The Chaffey "C" Awards are designed to recognize outstanding graduating sophomores who have contributed to the enrichment of the student activity program through their leadership, service, and scholastic achievement. Selection of the winners is made by the Chaffey "C" Award Committee composed of students and faculty members. Students should submit to the Office of Student Activities a listing of their activities each semester in order to be eligible for consideration for the awards. Proper forms for this purpose are available in the Office of Student Activities near the end of each semester.

In order to receive these awards the student must be graduating and meet the following requirements:

Gold "C" Award:
1. He must have a total of not less than 150 service award points. At least 50 of these must be earned in a minor field.*
2. He must have a grade point average of not less than 2.5.
3. Not more than 4% of the graduating class may receive the Gold "C" Award.

Silver "C" Award:
1. He must have a total of not less than 100 service awards points. At least 30 of these must have been earned in a minor field.*
2. He must have a grade point average of not less than 2.0.
3. Not more than 8% of the graduating class may receive the Silver "C" Award.

*Major field—Activity in which the majority of service points have been earned—athletics, student government, music, drama, etc.

Minor field—Activity service points earned outside the major field.
JEANETTE PARKILL AWARD—An Award given by the Associated Women Students to a sophomore girl who has been outstanding in student activities, scholarship, character, and has demonstrated high Christian ideals. This award was made possible by the parents of a former outstanding freshman woman student who was killed in an automobile accident, and the award is presented in her memory. A committee of students and faculty selects the recipient.

ASSOCIATED MEN STUDENTS MAN OF THE YEAR AWARD—
Each month the AMS selects a student who is given the honor of Man of the Month. Selection is based on leadership and service. At the end of the year one of these men is selected for the Man of the Year Award.

AWS SERVICE AWARD—Freshman Women—The AWS presents this award to a freshman woman who has given outstanding contributions to the college through her participation in activities, her service to the college, and her scholastic achievement.

AWS SERVICE AWARD—Sophomore Woman—This award is presented by the Associated Women Students to a sophomore woman student who has demonstrated high scholarship, leadership, and character, and at the same time has contributed the most service to the college during her two years in attendance.

GAUSE COVINGTON AWARD—Dr. Gause Covington annually presents an engraved wrist watch to a sophomore man who through his scholastic achievement and performance of his various responsibilities has exhibited those qualities of character and personality which indicate a successful future. The recipient is nominated by the faculty and then elected by a vote of all college men students.

BANK OF AMERICA AWARDS—Each year an award is made to the outstanding business administration major and to the outstanding secretarial student by the Bank of America.

CALIFORNIA SOCIETY OF CERTIFIED PUBLIC ACCOUNTANTS AWARD—The Citrus Belt Chapter of the California Society of Certified Public Accountants presents a cash award each year to the outstanding accounting major.

CHAFFEY COMMUNITY ART ASSOCIATION AWARDS—Art students exhibiting in the annual Chaffey College Art Exhibit are eligible for cash awards for the outstanding painting and ceramic piece on exhibit.

NATIONAL OFFICE MANAGEMENT ASSOCIATION AWARD—
The Inland Empire Chapter of the National Office Management Association cash award is given each year to an outstanding freshman business student.

UPLAND ROTARY CLUB OUTSTANDING SCHOLAR AWARD—
This annual award is designed to honor students for academic excellence. An engraved trophy is presented to that sophomore student who is graduating with an A.A. or A.S. degree and who has the highest grade point average in the graduating class.
ONTARIO KIWANIS CLUB AWARDS—Each year the Ontario Kiwanis Club gives awards to an outstanding student in the fields of electronics, secretarial science, merchandising, and physical science.

RODRIGUEZ MUSIC SERVICE AWARD—This award is made possible by a gift of a former Chaffey College student, Sam Rodriguez, who was active in Glee Club and Concert Choir. It is given to a student who is a member of either the Glee Club or Concert Choir and has contributed the most service to these organizations.

PANTHER BLACK STUDENT OF THE YEAR—Each year the Panther Blacks Club recognizes a student who has been outstanding in his leadership and contributions to the college. The student may be either a man or woman and need not be a member of the Panther Blacks Club.

BUILDING CONTRACTORS ASSOCIATION, THE BALDY VIEW CHAPTER CONTEST—Awards are presented yearly for the most outstanding set of house plans submitted by a Chaffey College student. Any student interested in designing homes is eligible to enter. Specific requirements are available at the Chaffey College drafting department.

SOUTHERN CALIFORNIA EDISON COMPANY KITCHEN PLANNING CONTEST—Awards are presented each year for the most unique all-electric kitchen design. Any student interested may enter by fulfilling specified requirements, which are available at the Chaffey College drafting department.

ENGINEERS AND ARCHITECTS ASSOCIATION ELECTRONICS AWARDS—Each semester this association recognizes the outstanding electronics student by the presentation of a $25.00 cash award.

MATHEMATICS AND PHYSICAL SCIENCE SPECIAL AWARDS—Each year the Chemical Rubber Company gives to the College three handbooks which are of value to students in mathematics and physics. These awards are given to the outstanding freshman mathematics student, the outstanding first-year physics student and the outstanding second-year physics student.

PHYSICAL EDUCATION ATHLETICS AWARDS—Students are recognized for their athletic ability and contributions through a number of awards. Each year the outstanding athlete of the year is selected and presented with a trophy. Captain’s trophies are presented to the captain of each major and minor sport. Outstanding team member awards are given throughout the year to those men who have contributed through their ability and enthusiasm to the over-all success and performance of the team.
Financial Assistance

Chaffey College through a program of scholarships, loans, and part-time job placement provides financial assistance to students in pursuing and completing their education.

SCHOLARSHIPS

CHAFFEY COLLEGE FRESHMAN MEMORIAL BOOK SCHOLARSHIPS—Chaffey College awards a number of book scholarships to entering freshmen students. These scholarships total $800.00 and are given in amounts of $50.00 to $100.00 to graduates of the following high schools: Chaffey, Chino, Claremont, Corona, Fontana, Montclair, and Upland. Applications should be obtained from high-school counselors in April of the senior year.

CHAFFEY COLLEGE WIVES BOOK SCHOLARSHIPS—The wives of the Chaffey College faculty members form an organization called the Chaffey College Wives which has established book scholarships to be awarded to freshmen students who plan to attend Chaffey College for their sophomore year. The award is made on the basis of scholastic achievement and financial need.

WINIFRED BAILEY MEMORIAL SCHOLARSHIP—The Winifred Bailey Memorial Scholarship is made possible by the income received from securities presented to Chaffey College by Herbert S. Bailey in memory of his wife. This scholarship is presented to a student who is majoring in music, ceramics, or one of the illustrative arts and intends to continue his education in one of these fields. The award is based upon evidence of ability, desire to pursue the subject, acceptable scholarship, social maturity, and economic need.

ASSOCIATED WOMEN STUDENTS SCHOLARSHIP—The AWS presents a scholarship to a sophomore woman who has shown exceptional leadership ability and outstanding scholastic achievement while a student at Chaffey College. Frequently women’s organizations cooperate with the AWS in raising money for this scholarship.

VETERANS CLUB SCHOLARSHIP—Funds earned by the Veterans Club through their various campus projects and activities provide a $100.00 scholarship which goes to a veteran who will transfer to a four-year college, has done better than average work at Chaffey College, and has some need of financial assistance to continue his education.

CAROLYN McQUAID SCHOLARSHIP—A scholarship awarded annually by Kappa Sigma Nu, the professional nursing club, to a professional nursing student at the end of her freshman year. The scholarship is given in memory of Carolyn McQuaid, an outstanding professional nursing student and a beloved classmate who was taken by death during her sophomore year. Qualifications for the scholarship include being an outstanding student, active in Kappa Sigma Nu, and interested in college activities. Money for the scholarship is earned by various club activities and projects.
SCHOLARSHIPS

PRICE FOUNDATION—DR. PEARL E. CLARK SCHOLARSHIPS—A grant of $600.00 has been given to Chaffey College by the Price Foundation, a local philanthropic organization, in the name of Dr. Pearl E. Clark, a retired teacher and dean of Chaffey College, as a tribute to her and her contributions to the College and its students. Dr. Clark devoted over 40 years of her life in untiring service to the students of Chaffey College. The $600.00 is divided into one $300.00 scholarship for a graduating student transferring to a four-year college and three $100.00 scholarships for students who are completing their freshmen year and will return as sophomores for the fall semester. One goes to an entering freshman, one to a terminal student and one to a transfer student.

JEAN PIERCE SCHOLARSHIP—This cash award was established by Elizabeth Hawkins Estrada, a former Chaffey College student, in honor of Jean Pierce, an American Indian girl. This award is given annually to a student whose scholastic achievement, participation in student activities, leadership ability, and conduct are worthy of recognition.

ALPHA GAMMA SIGMA SCHOLARSHIPS—Each year the California Junior College Honor Scholarship Society presents the Kathleen Loly Awards to Alpha Gamma Sigma members who are prospective permanent members. Over 60 chapters of Alpha Gamma Sigma compete for these awards. Applications may be obtained on campus from the Alpha Gamma Sigma adviser. In addition, several private four-year colleges reserve one or more scholarships for AGS permanent members. These include USC, Pomona College, La Verne College, the University of Redlands, Whittier College, Occidental College, Pepperdine College, the University of the Pacific (Stockton), L.A. College of Optometry, the California College of Medicine (L.A.), and Upland College.

ONTARIO ELEMENTARY TEACHERS ASSOCIATION SCHOLARSHIP—In order to assist prospective teachers in furthering their education, the Ontario Elementary Teachers Association has set up a scholarship for a Chaffey College student who is transferring to a four-year college and plans to enter the teaching profession. It is awarded to a student who shows promise of becoming a successful teacher and is in need of financial assistance.

AEROJET-GENERAL CORPORATION EDUCATION LOAN SCHOLARSHIP—Each year the Aerojet-General Corporation selects one or two engineering students to receive awards of $1,000.00 to $1,500.00. Chaffey College students compete with students from California State Polytechnic College, Citrus College, and Mount San Antonio College for these awards.

AMERICAN ASSOCIATION OF UNIVERSITY WOMEN SCHOLARSHIP—The Pomona Valley Chapter of the American Association of University Women divides its scholarship resources between the women of Chaffey College and Mount San Antonio College. Chaffey College receives the $100.00 scholarship in alternate years.
MONTCLAIR ROTARY CLUB SCHOLARSHIPS—The Montclair Rotary Club awards several scholarships each year to Montclair High School graduates who plan to attend Chaffey College. Students wishing to apply for these scholarships should obtain information from their counselors.

ONTARIO WOMEN'S CLUB NURSING SCHOLARSHIP—The Ontario Women's Club annually presents a $100.00 scholarship to a woman student who plans to continue the second year of the Registered Nursing program at Chaffey College. The award is given to a woman who shows evidence, through her academic record and her personality, of achieving outstanding success in the nursing profession.

RIVERSIDE-SAN BERNARDINO CHAPTER OF THE WIVES OF PROFESSIONAL ENGINEERS SCHOLARSHIP—The Wives of Professional Engineers divides its scholarship resources among Chaffey College, Riverside City College, and San Bernardino Valley College. Chaffey College receives the $300.00 in scholarship money every third year. The scholarships go to engineering majors who have high scholastic averages.

OTHER SCHOLARSHIPS—The college receives additional scholarships from community organizations interested in the students of Chaffey College. These scholarships, the qualifications required, and the procedures for application are announced through the Daily Bulletin and the Chaffey Collegiate Press and are posted on the scholarship bulletin board in the Campus Center.

LOANS

Several loan funds designed to help students with the purchase of books and to assist with financial emergencies are available at Chaffey College. Information and applications for loans may be obtained in the Student Activities Office, Administration 15. A loan committee composed of faculty members considers each loan and approves or denies it on the basis of the student's need, his academic record, and evidence of his ability to complete his educational work successfully.

CHAFFEY MEMORIAL LOAN FUND—Short-term, interest-free loans are offered through the Chaffey Memorial Loan Fund. This fund has been in operation for many years and has been made possible through gifts and bequests from friends of the college.

NATIONAL DEFENSE STUDENT LOANS—Chaffey College participates in the National Defense Education Act Loan program and grants loans up to $1,000.00 a year to students in accordance with the rules and regulations established by the Federal government.
PART-TIME EMPLOYMENT

DIANE GIBSON MEMORIAL LOAN FUND—A community organization, The Foothill Chapter of the National Charity League, Inc., has established the Diane Gibson Memorial Loan Fund for student nurses taking the professional nursing program at the college. The loan fund is designed to assist capable nursing students in completing the required course of study. Applications are reviewed by the college loan committee and recommendations made to the National Charity League.

UPLAND ROTARY CLUB LOAN FUND—The Upland Rotary Club has established this fund for students who need small loans and will be able to repay them within three months. This fund is administered by the college loan committee.

PART-TIME EMPLOYMENT

A placement secretary in the Student Activities Office, Administration 15, assists students in finding part-time employment. Opportunities for part-time work are to be found in the communities near the college, and a few jobs are available on the campus. Two days each week a representative of the California State Department of Employment is on campus to further aid students who are seeking employment.

Students taking vocational courses are also assisted in finding full-time employment upon the completion of their course of study.
Study Programs
Suggested Study Programs

Chaffey College offers two types of programs:

1. Occupational programs are designed to provide educational experiences that will give the student occupational competence and the Associate in Arts or Associate in Science degree in two years. Most of the occupational majors have been developed with the help of lay advisory committees selected from representatives of the industry involved. In some cases, these occupational programs may also be used as partially meeting lower division requirements in the state colleges which offer upper division majors in the same occupational fields.

2. Transfer programs are designed to meet the lower division requirements of the four-year colleges and universities to which students plan to transfer. The suggested programs which follow in part two of this section are typical, but in planning transfer programs the student must consult the catalog of the college or university to which he plans to transfer.

PART I

Occupational Programs

Occupational programs in the following major fields are listed below:

Aeronautics
Airline Stewardess
Art
Business Education
Accounting
Business Administration
Medical Receptionist
Merchandising
Office Clerical
Real Estate
Secretarial
Dental Assisting

Electronics
Engineering Aide
Chemical
Drafting
Surveying
Home Economics
Journalism
Lithography
Police Science
Professional Nurse
Supervision
Vocational Nurse

AERONAUTICS

The Federal Aeronautics Administration has approved the Chaffey School of Aeronautics for training leading to the FAA "A" and "E" licenses for aircraft and engine mechanics.

The Chaffey aircraft and engine shops, and the two separate programs of instruction, are FAA approved.

One program leads to the "A" and the other to the "E" license, and both are vocational curricula, preparing students for immediate employment in the aircraft industry. Either program may be followed the first year. All students in the "A" or "E" program must enroll for at least 14 units each semester.
Aircraft Mechanics ("A" License)  
Aero 61a, 61b (Theory of Airplane Construction) 10  
Aero 62a, 62b (Airplane Const.) 10  
Aircraft Engine Mechanics ("E" License)  
Aero 51a, 51b (Engine Theory) 10  
Aero 52a, 52b (Engine Shop) 10  

Additional time necessary to meet specified hourly requirements may be taken in summer session or in a fifth semester and will be listed as 51c, 52c, 61c, 62c. Units will be assigned in proportion to the time spent up to 5 for each course.

All Aeronautics students will include the following in their programs:

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aero 71</td>
<td>2</td>
</tr>
<tr>
<td>History 57</td>
<td>3</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
</tr>
<tr>
<td>Math 50</td>
<td>3</td>
</tr>
<tr>
<td>Political Science 57</td>
<td>2</td>
</tr>
<tr>
<td>P. E.</td>
<td>2</td>
</tr>
<tr>
<td>Electives as needed</td>
<td></td>
</tr>
<tr>
<td>English and Speech</td>
<td>6 or 7</td>
</tr>
<tr>
<td>a. English 1a or 91a</td>
<td>3</td>
</tr>
<tr>
<td>b. Speech 1</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>a. English 1a or 91a</td>
<td>3</td>
</tr>
<tr>
<td>b. English 1b or 91b</td>
<td>3</td>
</tr>
<tr>
<td>c. Speech 55</td>
<td>1</td>
</tr>
</tbody>
</table>

FAA requirements specify 1040 hours in either program or a total of 1800 if the two programs are combined. To meet the hourly requirement students must take additional hours in the summer session or in an extra semester.

The Aero Trade Extension program consists of four courses designated as Aeronautics 53, 54, 63, and 64. This program is designed to assist students who are employed in the aviation industry to obtain their aircraft mechanics or aircraft engine mechanics license.

Courses in jet propulsion are offered for "A" and "E" mechanics or men employed in the jet industry. They provide for the theory and practical aspects of all types of jet engines and their operation. These courses also include a unit of rocket mechanics and are operated on the Trade Extension basis.

Flying club activities
### AIRLINE STEWARDESS TRAINING

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Units</th>
<th>Second Semester</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Economics 21</td>
<td>2</td>
<td>Home Eco. 10 (nutrition)</td>
<td>2</td>
</tr>
<tr>
<td>(Personality and Dress)</td>
<td></td>
<td>English 53b (bus. letters)</td>
<td>3</td>
</tr>
<tr>
<td>English 53a (business)</td>
<td>3</td>
<td>Hygiene 3</td>
<td>3</td>
</tr>
<tr>
<td>Geography 1a</td>
<td>3</td>
<td>Foreign language or elective</td>
<td>4</td>
</tr>
<tr>
<td>Foreign language or elective</td>
<td>4</td>
<td>Speech 2 or Drama 1</td>
<td>3</td>
</tr>
<tr>
<td>Speech 1</td>
<td>3</td>
<td>Hygiene 1</td>
<td>2</td>
</tr>
<tr>
<td>P. E.</td>
<td>½</td>
<td>P. E.</td>
<td>½</td>
</tr>
<tr>
<td><strong>Total</strong>: 15½</td>
<td></td>
<td><strong>Total</strong>: 16½</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Units</th>
<th>Fourth Semester</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Economics 55</td>
<td>1</td>
<td>Psychology 33</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 1a</td>
<td>3</td>
<td>Sociology 1b</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 1a</td>
<td>3</td>
<td>S. S. 3b (typing)</td>
<td>2</td>
</tr>
<tr>
<td>S. S. 3a (typing)</td>
<td>2</td>
<td>Business 4a (shorthand)</td>
<td>5</td>
</tr>
<tr>
<td>Business 4a (shorthand) or Music and Art</td>
<td>5</td>
<td>Music and Art</td>
<td>½</td>
</tr>
<tr>
<td>P. E.</td>
<td>½</td>
<td>P. E.</td>
<td>½</td>
</tr>
<tr>
<td><strong>Total</strong>: 16½</td>
<td></td>
<td><strong>Total</strong>: 16½</td>
<td></td>
</tr>
</tbody>
</table>

Companies generally specify the following:

1. **Personal Qualifications**
   - An Airline Stewardess must be a citizen of the United States and unmarried. She must be at least 5’2” and not over 5’7” in height, and weigh 135 pounds, or less, proportionately. She must have attained her 21st birthday and not yet reached her 27th birthday.
   - Each applicant is required to pass a rigid physical examination approved by the medical department of the airline to make certain that she has no physical abnormalities that would impair or tend to impair her usefulness for flying duty. One of the more important physical requirements is satisfactory vision (20/30 each eye, or better, without glasses). The wearing of glasses while in uniform is not permitted.

2. **Education**
   - Applications are now accepted for girls who are either Registered Nurses, or who have completed at least two years of college, or one year of college, plus one year of business experience. Studies in the following subjects are helpful to the success of a stewardess: Speech, English, Physiology or Hygiene, Psychology, Sociology, Home Economics, Foreign Languages, Music or Art as well as participation in extra-curricular work, sororities and clubs.

3. **Suggested program of study at Chaffey College**
   - Note: Those women who wish flying experience and/or a pilot’s license should join the Chaffey College Flying Club. Contact Mr. Felsch in the Aeronautics Department.
ART

The Art Department is prepared to serve students who need art as a background for other fields and those who will follow art as a vocation. Special attention is given art majors to help prepare them for transfer to professional art schools or for direct employment in the following fields:

Commercial Art—Recommended courses are:

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 2a, 2b</td>
<td>4</td>
</tr>
<tr>
<td>Art 3a, 3b</td>
<td>2</td>
</tr>
<tr>
<td>Art 51</td>
<td>1</td>
</tr>
<tr>
<td>Art 5a, 5b, 5c, 5d</td>
<td>4-8</td>
</tr>
<tr>
<td>Art 6a, 6b</td>
<td>2-4</td>
</tr>
</tbody>
</table>

Ceramic Design—Recommended courses are:

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 2a, 2b</td>
<td>4</td>
</tr>
<tr>
<td>Art 3a, 3b</td>
<td>2</td>
</tr>
<tr>
<td>Art 17a, 17b, 17c, 17d</td>
<td>8</td>
</tr>
<tr>
<td>Art 57a, 57b</td>
<td>4</td>
</tr>
<tr>
<td>Art 58a, 58b</td>
<td>4</td>
</tr>
</tbody>
</table>

Interior Decoration—Recommended courses are:

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 23</td>
<td>3</td>
</tr>
<tr>
<td>Art 2a, 2b</td>
<td>4</td>
</tr>
<tr>
<td>Accounting 1a, 1b</td>
<td>8</td>
</tr>
<tr>
<td>Art 3a, 3b</td>
<td>2</td>
</tr>
</tbody>
</table>

BUSINESS EDUCATION DIVISION

The Business Education Division offers a variety of educational opportunities designed to meet specific student objectives:

(1) Programs designed to give training for occupational competence in various business fields as described in the merit award certificate programs listed below.

(2) Courses which will meet the lower division requirements for upper division work at colleges and universities.

(3) Courses designed to provide training needed for advancement by employed persons.

(4) Elective courses of general interest to students in other major fields.

Work study programs are available for those majoring in the secretarial and merchandising fields. Placement assistance is provided participants through the faculty coordinator of each program.

The business teachers and the office counselors will assist students who plan to transfer to upper division work at a four-year college or university to select the institution best suited to their needs, and will help in planning the program required by the institution selected.

A general advisory committee on business education consisting of eleven members representing business and industry of the Chaffey area helps to keep the faculty aware of changing employment demands and opportunities, and aids in curricular development to meet the changing needs.
OCCUPATIONAL PROGRAMS

THE ASSOCIATE IN ARTS DEGREE

For Business Education Students

GRADUATION REQUIREMENTS — The requirements for graduation with the degree of Associate in Arts are specified by the State Board of Education and the Chaffey Board of Trustees.

UNIT AND SUBJECT REQUIREMENTS FOR GRADUATION:

Units

1. Hygiene 1 (Healthful Living) ...................................................... 2
2. Physical Education ...................................................................... 2
   (required of all students under 25 years of age)
3. History and Government ........................................................ 5 or 6
   A. History 2 or 57 and
   Political Science 2 or 57 or 1a
   or
   B. History 17a and 17b,
4. English and Speech .............................................................. 6 or 7
   (English 53a and 53b meet the English requirements
   and are recommended for occupational students.)
5. All of the courses listed in one of the certificate programs
   or a transfer major or one of the minimum majors.
6. At least one course outside of the Business Education Di-
   vision, not listed above. A course selected from: Art 1a, 1b; Music 2a, 16a; History 4a, 4b; Philosophy 6a, is
   recommended ................................................................ 2 or 3
7. Additional elective courses from the certificate program or
   other courses from the Business Education Division or from
   other divisions of the college.
   Total .................................................................................. 64

CERTIFICATE PROGRAMS IN BUSINESS

The certificate programs in Business Education at Chaffey College are designed to qualify a person for selected areas of employment.

These programs are based upon the latest available information that defines the qualifications required of applicants for jobs in the various certificate fields.

To qualify for a Business Certificate one must have completed 48 units of college work including 6 units of English. A "C" or better average must be earned for all classes completed.

ACCOUNTING CERTIFICATE PROGRAM

Basic Requirements: Accounting 1a, 1b, 2a, 2b, 3; Business Admin-
istration 18a, 18b; Statistics 1.

Required Electives: At least 9 units from the following list of
courses: Business 40, 41, 42, 43; Business En-
lish 56; Economics 1a or 57; Mathematics 2.

Recommended Electives: General Business 15, 55, 64, 67, 68; Accounting
71, 72; Psychology 1a; Secretarial Science 3a.
BUSINESS ADMINISTRATION CERTIFICATE PROGRAM

Basic Requirements: Accounting 1a, 1b; Speech 55; Statistics 1; Business Administration 18a, 18b, 40; Economics 1 or 57.

Required Electives:  
*Office Management: Business Administration 41, 43; Business English 56; General Business 15, 64.  
Personnel Management: Business Administration 41, 42, 61; General Business 64, 68.  
General Administration: Business Administration 41, 42, 85; Business English 56.  
*Secretarial Science 102a and 103a recommended for office management specialization.

Recommended Electives: Select 6 units from the following courses or from one of the areas other than the area of specialization. Psychology 1a; Philosophy 6a; Accounting 10, 71, 72; Secretarial Science 3a, 4a, 5, 51a, 51b, 102a, 103a; General Business 55, 60, 67; History 4a or 4b; Mathematics 2; Sociology 1a; Real Estate 88a.

MERCHANDISING CERTIFICATE PROGRAM

Basic Requirements: Merchandising 26 or 56, 58a, 58b, 59a, 59b, 101a, 101b, 101c, 101d; General Business 64; Mathematics 78.

Required Electives: Nine units from the following: Speech; Secretarial Science 3a; General Business 55, 67, 68, 75; Business Administration 18a, 85; Merchandising 50.

Recommended Electives: Art, music, literature, history, philosophy.

OFFICE-CLERICAL CERTIFICATE PROGRAM

Basic Requirements: General Business 15, 55, 62*, 64, 67; Business Administration 18a; Secretarial Science 3b or 53c, 53d†. Accounting 1a, 1b or Accounting 1a, 71 and 72, or Accounting 71 and 72, General Business 75, 78.

Required Electives: Twelve or more units from the following list of courses: Business Administration 18b, 40 or 41, 43; Economics 57; Secretarial Science 4a, 4b, 5, 53c, 53d; Real Estate 88a; Speech; Work Study 102a, 102b.

* Or pass proficiency test in spelling.  
† Or pass achievement test in typewriting.
SECRETARIAL CERTIFICATE PROGRAM

The Secretarial Certificate Program offers three possible certificates:

**Basic Requirements:** General Secretarial Certificate: Secretarial Science 5, 52a, 53c, 102a, 102b, 103a, 103b; General Business 15, 62*, 64; Business Administration 18a, 40; English 53b; Speech; Accounting 1a or General Business 75 and 78.

**Executive Secretarial Certificate:** Requirements listed in General Secretarial Certificate plus Business Administration 41 and 42; Economics 57; Secretarial Science 52b. Accounting 1a is required.

**Medical Secretarial Certificate:** Requirements listed in General Secretarial Certificate plus Secretarial Science 52c; Medical Secretary 55, 56, 57, 58.

**Required Electives:** For General Secretarial Certificate: Nine units from the following—Secretarial Science 52b, 53d; Business Administration 18b, 41, 43, 61; General Business 55, 67; Real Estate 19, 88a, 88b; Merchandising 26; English 53a, 61.

* Or pass proficiency test in spelling.

REAL ESTATE CERTIFICATE PROGRAM

A minimum of five courses in Group I are required for the certificate. Real Estate 51 may be taken in lieu of Real Estate 88a. Nine additional units should be taken from Group II and Group III, bringing the total required for the Real Estate Certificate to 24 units. Six units are required from Group II and three units are required from Group III.

**GROUP I:**

<table>
<thead>
<tr>
<th>Real Estate 19</th>
<th>3</th>
<th>Real Estate 88a</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Estate 51</td>
<td>3</td>
<td>Real Estate 88b</td>
<td>3</td>
</tr>
<tr>
<td>Real Estate 52</td>
<td>3</td>
<td>Real Estate 89</td>
<td>3</td>
</tr>
</tbody>
</table>

**GROUP II:**

<table>
<thead>
<tr>
<th>Business Administration 18a</th>
<th>3</th>
<th>*Commercial and Investment Properties</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration 40</td>
<td>3</td>
<td>Real Estate 53</td>
<td>3</td>
</tr>
</tbody>
</table>

**GROUP III:**

| General Business 68         | 3 | Merchandising 26                    | 3 |
| General Business 75         | 3 | General Business 78                  | 3 |

* Real Estate X 482.3 AB, a University of California Extension course.

The following post-licensing real estate courses are acceptable for transfer to the University of California as part of the requirements for the University of California Extension Division Real Estate Certificate:

<table>
<thead>
<tr>
<th>Real Estate 51</th>
<th>3</th>
<th>Real Estate 88b</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Estate 19</td>
<td>3</td>
<td>Real Estate 89</td>
<td>3</td>
</tr>
<tr>
<td>Real Estate 52</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

57
DENTAL ASSISTING

The Dental Assisting curriculum is a one-year program providing training in the technical skills needed by qualified dental assistants. Students who successfully complete the program qualify for a certificate in Dental Assisting.

The Dental Assisting curriculum has been developed with the cooperation of an advisory committee made up of dentists in the Tri-County Dental Society. During the second semester each student has experience in working in a dentist's office under the direct supervision of the dentist and his regular assistant.

Applications for admission to the Dental Assisting program should be made by May 15. Students are admitted to the program on the basis of the following criteria:

I. General qualifications:
   - Good health
   - No physical handicaps
   - Manual dexterity
   - Good appearance and personality

II. Scholastic record:
   - High-school diploma or equivalent
   - C average or above in high school
   - College transfer students must have a grade average of C or better

III. Entrance examinations:
   - General intelligence
   - Differential aptitude
   - General achievement

IV. Advisory and admissions committee acceptance:
   - The student may discuss these requirements with her counselor or at the time of registration.

Students wishing to work toward an Associate in Science Degree, with a major in Dental Assisting, may do so by taking an additional year of college work. See Index for graduation requirements.

The student must earn at least a C grade in all courses in order to remain in the program. All students on the deficiency list are required to attend the make-up laboratory until the deficiency is cleared.

**OUTLINE OF DENTAL ASSISTING PROGRAM**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Units</th>
<th>Second Semester</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental Assisting 52</td>
<td>4</td>
<td>Dental Assisting 53b</td>
<td>3</td>
</tr>
<tr>
<td>Dental Assisting 53a</td>
<td>5</td>
<td>Dental Assisting 54b</td>
<td>2</td>
</tr>
<tr>
<td>Dental Assisting 54a</td>
<td>2</td>
<td>Dental Assisting 55b</td>
<td>2</td>
</tr>
<tr>
<td>Dental Assisting 55a</td>
<td>2</td>
<td>Dental Assisting 57</td>
<td>3</td>
</tr>
<tr>
<td>Dental Assisting 56</td>
<td>3</td>
<td>Dental Assisting 58</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>½</td>
<td>Physical Education</td>
<td>½</td>
</tr>
<tr>
<td></td>
<td>16½</td>
<td></td>
<td>15½</td>
</tr>
</tbody>
</table>

58
ELECTRONICS

The Electronics Department of Chaffey College offers courses designed to fulfill two general needs:

1. A two-year electronics technician program provides training, both theoretical and practical, for work in a number of areas in the rapidly growing electronics industry. (This program is available in the evening classes, requiring 3½ to 4 years for completion.)

2. A number of Extension courses enable the trained electronics technician to further his knowledge in a specified field.

**ELECTRONICS TECHNICIAN**

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronics 50</td>
<td>3</td>
<td>Electronics 58ab</td>
<td>9</td>
</tr>
<tr>
<td>Electronics 53</td>
<td>4</td>
<td>Electronics 59ab</td>
<td>9</td>
</tr>
<tr>
<td>Electronics 56</td>
<td>1</td>
<td>Math C</td>
<td>3</td>
</tr>
<tr>
<td>Electronics 57ab</td>
<td>9</td>
<td>Political Science 57</td>
<td>2</td>
</tr>
<tr>
<td>English 91a, 91b</td>
<td>6</td>
<td>History 57</td>
<td>3</td>
</tr>
<tr>
<td>Math A</td>
<td>5</td>
<td>Speech 5</td>
<td>1</td>
</tr>
<tr>
<td>Physics 10</td>
<td>3</td>
<td>Drafting 56</td>
<td>3</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Elective</td>
<td></td>
</tr>
</tbody>
</table>

Extension Courses:

- Electronics 69a, 69b
- Code Practice ................................ each 1 unit
- Electronics 77
- Digital Computers .................................. 4 units
- Electronics 84a
- Microwaves and Radar .......................... 3 units
- Electronics 84b
- Microwaves and Radar .......................... 2 units
- Electronics 86a
- Transistors ........................................ 4 units
- Electronics 86b
- Transistor Pulse and Switching
  Circuits .............................................. 4 units
- Electronics 87a
- Magnetic Amplifiers and Servo
  Mechanisms ........................................ 3 units

**ENGINEERING AIDE**

With the increasing demands in engineering many positions have opened in planning, research, testing, checking, analyzing, and computing which do not require an engineer. These positions are being assigned to technicians or aides who have the necessary basic knowledge and skills.

The following program is diversified to include several types of courses needed to qualify the student for employment in the respective fields. Anyone taking this program would also profit by meeting the requirements for graduation.

**ENGINEERING AIDE**

I. Requirements for Graduation: See Index.

II. Necessary Mathematics:

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 91</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 92</td>
<td>3</td>
</tr>
</tbody>
</table>
III. Necessary Courses in optional areas:

1. **Chemical Technician**:

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics 10, 11</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 1a, 1b</td>
<td>10</td>
</tr>
<tr>
<td>Chemistry 2A</td>
<td>5</td>
</tr>
<tr>
<td>Chemistry 5</td>
<td>4</td>
</tr>
</tbody>
</table>

2. **Drafting Technician**:

Required courses for all drafting technicians:

**Units** | **Units**
--- | ---
Drafting 1a, 51a, 52 | 6 | Mathematics through trigonometry
**Electrical Option**:
Drafting 51b, 56, 57 | 7 | Electricity 51a, 51b or
Electronics 50 | 3 | Physics 10, 11 | 6 or 4
Electronics 56 | 1 | Electronics 53 | 4

**Architectural Option**:
Art 2a, 2b | 4 | Drafting 57 | 2
Art 3a, 3b | 4 | Engineering 1a, 1b | 6
Drafting 3a, 3b, 3c | 6

**Mechanical Option**:
Drafting 1b, 51b | 4 | Electronics 56 | 1
Drafting 55a | 2 | Engineering 1a | 3
Drafting 56 | 3 | Engineering 25a | 3
Electronics 50 | 3

3. **Surveying Technician**:

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drafting 1a, 1b</td>
<td>4</td>
</tr>
<tr>
<td>Drafting 51a, 51b</td>
<td>4</td>
</tr>
<tr>
<td>Geology 1a</td>
<td>4</td>
</tr>
</tbody>
</table>

**HOME ECONOMICS**

The modern woman often combines the responsibilities of a wife and home maker with those of a career. Elective courses permit a choice for training in home skills and management using modern materials and equipment. The following courses are suggested:

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>H.E. 1a, 1b (Foods)</td>
<td>3-3</td>
</tr>
<tr>
<td>H.E. 5a (House Planning and Equipment)</td>
<td>2</td>
</tr>
<tr>
<td>H.E. 5b (Home Management)</td>
<td>2</td>
</tr>
<tr>
<td>H.E. 10 (Nutrition)</td>
<td>2</td>
</tr>
<tr>
<td>H.E. 21 (Art in Dress)</td>
<td>2</td>
</tr>
</tbody>
</table>

See Index for graduation requirements.
JOURNALISM

Training for skill and power in writing is the aim of the Journalism Department, which offers a two-year "grass-roots" course designed to prepare those who wish to go immediately into small-town and country newspapers for feature writing, or those who wish to use journalistic training in other professions.

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 2a, 2b</td>
<td>6</td>
<td>English 2c, 2d</td>
<td>6</td>
</tr>
<tr>
<td>Political Science 2 or 57</td>
<td>3 or 2</td>
<td>English 36a, 36b or 5a, 5b</td>
<td>6</td>
</tr>
<tr>
<td>History 2 or 57</td>
<td>3</td>
<td>Business 50</td>
<td>3</td>
</tr>
<tr>
<td>English 1b</td>
<td>3</td>
<td>Journalism 57a, 57b</td>
<td>4</td>
</tr>
<tr>
<td>Speech 5 or 1</td>
<td>1 or 3</td>
<td>Economics 1a, 1b, or Sociology</td>
<td></td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>1a, 1b</td>
<td>6</td>
</tr>
<tr>
<td>P. E.</td>
<td></td>
<td>P. E.</td>
<td>1</td>
</tr>
</tbody>
</table>

LITHOGRAPHY

The Lithography Department offers vocational courses approved by the Trade and Industrial Department of the State Board of Education.

Courses are planned to provide thorough training in the fundamentals of the offset lithography trade, enabling the student to profit from further specialized training as an advanced apprentice in the industry.

The curriculum is designed, in addition to giving occupational competency, to develop proper attitudes toward fellow workers and employers and to instill into the student an awareness of his own responsibilities as a craftsman, enjoyment in his work, and pride in personal achievement.

The two-year course is divided into six areas of work: copy preparation, camera operation, stripping and layout, plate-making, presswork and bindery work.

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithography 1a, 1b</td>
<td>12</td>
<td>Lithography 2a, 2b</td>
<td>6</td>
</tr>
<tr>
<td>P. E.</td>
<td>1</td>
<td>Lithography 61a, 61b</td>
<td>6</td>
</tr>
<tr>
<td>History 57</td>
<td>3</td>
<td>P. E.</td>
<td>2</td>
</tr>
<tr>
<td>General Business 78</td>
<td>3</td>
<td>Hygiene 1</td>
<td>2</td>
</tr>
<tr>
<td>English 53a</td>
<td>3</td>
<td>Art 5a, 5b</td>
<td>2</td>
</tr>
<tr>
<td>Secretarial Science 3a, 3b</td>
<td>4</td>
<td>English 95a, 95b</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Speech 55</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Political Science 57</td>
<td>2</td>
</tr>
</tbody>
</table>

POLICE SCIENCE

The Chaffey Police Science curriculum is designed to serve a fourfold purpose: (1) to provide pre-employment training for the undergraduate who desires to enter the field of law enforcement; (2) to provide in-service training for the employed officer; (3) to offer an Associate in Arts degree at Chaffey College to those who desire it; and (4) to offer a transfer program for those who wish to go on to a four-year college to get a bachelor's degree.

All new recruits or law enforcement personnel should enroll in the two semesters of Introduction to Law Enforcement and Administration of Justice in sequence.
OCCUPATIONAL PROGRAMS

Police Science 10 and 11 and courses numbered in the twenty series are required courses and meet the requirements of the State Commission of Peace Officers Standards and Training (POST).

Courses numbered in the thirty series are elective courses. All courses may be used to satisfy requirements for the Associate in Arts degree or may be transferred to other institutions which offer comparable courses.

Suggested program for terminal students in Police Science:

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Units</th>
<th>Second Semester</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police Science 10</td>
<td>3</td>
<td>Police Science 11</td>
<td>3</td>
</tr>
<tr>
<td>English 91a or 1a</td>
<td>3</td>
<td>Secretarial Science 3a</td>
<td>2</td>
</tr>
<tr>
<td>Biology 1a</td>
<td>4</td>
<td>(Typing)</td>
<td>2</td>
</tr>
<tr>
<td>Psychology 55 or 1a</td>
<td>3</td>
<td>Sociology 2 or Psychology 33</td>
<td>3</td>
</tr>
<tr>
<td>General Business 62</td>
<td>2</td>
<td>Chemistry 2A</td>
<td>5</td>
</tr>
<tr>
<td>Psychology 51</td>
<td>1</td>
<td>Police Science 21</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/2</td>
<td>Physical Education</td>
<td>1/2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16 1/2</strong></td>
<td><strong>Total</strong></td>
<td><strong>16 1/2</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Units</th>
<th>Fourth Semester</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police Science 25</td>
<td>3</td>
<td>Police Science 26</td>
<td>3</td>
</tr>
<tr>
<td>Police Science 28</td>
<td>3</td>
<td>Police Science 29</td>
<td>3</td>
</tr>
<tr>
<td>Police Science 24</td>
<td>3</td>
<td>Police Science 27</td>
<td>3</td>
</tr>
<tr>
<td>History 57</td>
<td>3</td>
<td>Speech 1</td>
<td>3</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>Sociology 1b</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 1a</td>
<td>3</td>
<td>Political Science 57</td>
<td>2</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/2</td>
<td>Physical Education</td>
<td>1/2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17 1/2</strong></td>
<td><strong>Total</strong></td>
<td><strong>17 1/2</strong></td>
</tr>
</tbody>
</table>

Suggested programs for Associate in Arts degree and transfer students:

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Units</th>
<th>Second Semester</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1a</td>
<td>3</td>
<td>Speech 1</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 1a</td>
<td>3</td>
<td>Chemistry 2A</td>
<td>5</td>
</tr>
<tr>
<td>Biology 1a</td>
<td>4</td>
<td>History 2</td>
<td>3</td>
</tr>
<tr>
<td>Police Science 10</td>
<td>3</td>
<td>Police Science 11</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 51</td>
<td>1</td>
<td>Police Science 21</td>
<td>3</td>
</tr>
<tr>
<td>Secretarial Science 3a</td>
<td>2</td>
<td>Physical Education</td>
<td>1/2</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/2</td>
<td><strong>Total</strong></td>
<td><strong>17 1/2</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Units</th>
<th>Fourth Semester</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political Science 2</td>
<td>3</td>
<td>Sociology 1b</td>
<td>3</td>
</tr>
<tr>
<td>Police Science 24</td>
<td>3</td>
<td>Police Science 26</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 1a</td>
<td>3</td>
<td>Police Science 27</td>
<td>2</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>Sociology 2 or Psychology 33</td>
<td>3</td>
</tr>
<tr>
<td>Police Science 28</td>
<td>3</td>
<td>English 1b</td>
<td>3</td>
</tr>
<tr>
<td>Police Science 25</td>
<td>3</td>
<td>Police Science 29</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/2</td>
<td>Physical Education</td>
<td>1/2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17 1/2</strong></td>
<td><strong>Total</strong></td>
<td><strong>17 1/2</strong></td>
</tr>
</tbody>
</table>
PROFESSIONAL NURSING

This program, leading to the Associate in Science Degree with a major in nursing, is designed to help the student develop those competencies necessary for first-level positions and to fill this role as a member of the health team. On successful completion of the program the graduate is eligible to apply to the State Board of Nursing Education and Nurse Registration for admission to the examination for licensure to practice as a Registered Nurse.

During the program, which covers two academic years and two six-week summer sessions, students are enrolled in general education courses which are essential to an understanding of the physiological, psychological, and sociological principles which are involved in the solution of nursing problems. In addition to these courses and nursing courses which are held on the Chaffey College campus, students have experience in the application of nursing care problems as they care for patients in hospitals and in other health agencies under the guidance of their instructors.

The philosophy of the Department of Nursing is in accord with that of the College. It is based on a belief in the dignity and worth of the individual and the responsibility of each individual to society in its totality. Based on this philosophy, the nursing program is developed to provide educational experiences which promote the personal growth of the student as she acquires the knowledge and ability essential to the practice of general nursing.

An applicant for admission to the program in nursing must:

1. Be admitted to Chaffey College (see Enrollment Procedures in Index).
2. Have completed a course in chemistry with laboratory in high school or in junior college, college, or university.
3. Have had one year of high-school algebra.
4. Be eligible to enroll in English 1a.
5. Be between the ages of 17 and 45. Applicants over 45 will be considered on an individual basis.
6. Be in good physical and mental health as determined by a health examination.
7. Have a personal interview with the Admissions Sub-committee.

Recommended high-school courses:

1. One unit in geometry.
2. One unit of science.
OCCUPATIONAL PROGRAMS

PROFESSIONAL NURSING

NOTE: See course descriptions for integration of program. In order to continue in the program students must have a grade of C or better in all nursing courses.

<table>
<thead>
<tr>
<th>First Semester (Fall)</th>
<th>Units</th>
<th>Second Semester (Spring)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy 1</td>
<td>4</td>
<td>Bacteriology 2</td>
<td>4</td>
</tr>
<tr>
<td>Physiology 1</td>
<td>4</td>
<td>Psychology 1a</td>
<td>3</td>
</tr>
<tr>
<td>English 1a</td>
<td>3</td>
<td>Home Economics 1c</td>
<td>3</td>
</tr>
<tr>
<td>Fundamentals of Nursing 1</td>
<td>5</td>
<td>Fundamentals of Nursing 2</td>
<td>6</td>
</tr>
<tr>
<td>Physical Education</td>
<td>½</td>
<td>Physical Education</td>
<td>½</td>
</tr>
<tr>
<td></td>
<td>16½</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Summer Session</th>
<th>Units</th>
<th>Third Semester (Fall)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamentals of Nursing 3</td>
<td>3</td>
<td>Speech 1</td>
<td>3</td>
</tr>
<tr>
<td>History 2</td>
<td>3</td>
<td>Sociology 1a</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Fundamentals of Nursing 4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fundamentals of Nursing 5</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical Education</td>
<td>½</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>14½</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Semester (Spring)</th>
<th>Units</th>
<th>Summer Session</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Political Science 2</td>
<td>3</td>
<td>Fundamentals of Nursing 7</td>
<td>5</td>
</tr>
<tr>
<td>Psychology 1b</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fundamentals of Nursing 6a</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fundamentals of Nursing 6b</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Education</td>
<td>½</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15½</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SUPERVISION

Classes in Supervision are designed for industrial employees who are now in supervisory positions or are aspiring to become foremen or supervisors.

An advisory committee of industrial representatives, working with representatives of the California State Department of Education, Bureau of Industrial Education, has been instrumental in the development of this program. Local advisory committees help expand this program to cover supervision in government service.

Certificates in Supervision are issued to students who complete a program of at least eight courses described as industrial supervision. Five required courses plus three elected courses satisfy the requirements for a certificate.
OCCUPATIONAL PROGRAMS

Required Courses:
1. Supervision 51  Elements of Supervision
2. Psychology 52  Basic Psychology for Supervisors
3. Psychology 53  Human Relations for Supervisors
4. English 61  Written Communication for Supervisors
5. Supervision 55  Organization and Management for Supervisors

Elective Courses:
Any three courses under the section on Supervision, English 95a, 95b (Reading Improvement), Speech 61, or Political Science 57 or Political Science 58.

Not all of these courses are offered each semester or each year. The student should check the contemplated time of offering of the various courses. Frequency of offerings depends somewhat upon demands.

Students may qualify for an A.A. degree with a Supervision major by completing general education requirements and 64 units. Speech 61 and English 61 count as six units toward the 20-unit major and also meet the requirements for Speech and English in the general education requirements for a degree. The student must have at least 20 units in Supervision.

VOCATIONAL NURSING

This program covers a period of three semesters, starting either in the spring or fall semester. It prepares the student for direct patient care in situations where she is under the supervision of physicians and/or registered nurses. Although some classes are held on the Chaffey College campus, the major part of the educational experience takes place in hospitals which are used as extended campuses. The student is under the supervision and direction of a member of the college faculty in nursing at all times.

On successful completion of the program the student receives a Certificate of Completion and is eligible to apply to the California Board of Vocational Nurse Examiners for permission to take the examination for licensure as a Vocational Nurse.

Students wishing to receive the Associate in Science degree with a major in Vocational Nursing may do so by fulfilling the additional requirements for awarding of the degree.

Students wishing to apply for admission must:
1. Be admitted to Chaffey College.
2. Be high-school graduates or have the equivalent. Equivalency is determined by results of placement tests.
3. Make application to the Department of Nursing for admission to the program.
4. Have a personal interview.
5. Present evidence of physical and mental health as determined by a health examination.
## OCCUPATIONAL PROGRAMS

### THREE SEMESTER PROGRAM

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Units</th>
<th>Second Semester</th>
<th>Units</th>
<th>Third Semester</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing 51a</td>
<td>8</td>
<td>Nursing 52a</td>
<td>6</td>
<td>Nursing 51c</td>
<td>8</td>
</tr>
<tr>
<td>P. E.</td>
<td>1/2</td>
<td>Nursing 54</td>
<td>4</td>
<td>P. E.</td>
<td>1/2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nursing 52b</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>14 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nursing 52c</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>18 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>15 1/2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Vocational Nurse graduation exercises

Nursing care experience
PART II

Transfer Programs

Students who plan to enter the upper division of a university or four-year college after finishing at Chaffey should be familiar with six general types of requirements.

1. Requirements for admission to freshman standing (high-school subjects).
2. The general graduation requirements which must be met by all students in the college or university to which the student plans to transfer.
3. The specific lower division courses required by the particular college or school of the university in which the major portion of advanced work is to be taken.
4. Certain courses which must be taken in preparation for the student's selected major field of concentration.
5. A minimum total amount of work which includes both requirements and electives.
6. A satisfactory scholarship (grade) average for all high-school and college work.

Transfer programs are offered in the following majors:

<table>
<thead>
<tr>
<th>Agriculture</th>
<th>Liberal Arts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture</td>
<td>Librarianship</td>
</tr>
<tr>
<td>Art</td>
<td>Literature, Philosophy</td>
</tr>
<tr>
<td>Bacteriology</td>
<td>Mathematics</td>
</tr>
<tr>
<td>Biology</td>
<td>Medicine</td>
</tr>
<tr>
<td>Botany</td>
<td>Music</td>
</tr>
<tr>
<td>Business</td>
<td>Nursing</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Occupational Therapy</td>
</tr>
<tr>
<td>Criminology</td>
<td>Optometry</td>
</tr>
<tr>
<td>Dental Hygiene</td>
<td>Pharmacy</td>
</tr>
<tr>
<td>Dentistry</td>
<td>Physical Education</td>
</tr>
<tr>
<td>Economics</td>
<td>Physical Therapy</td>
</tr>
<tr>
<td>Engineering</td>
<td>Physics</td>
</tr>
<tr>
<td>English, Journalism</td>
<td>Political Science</td>
</tr>
<tr>
<td>Forestry</td>
<td>Police Science</td>
</tr>
<tr>
<td>French</td>
<td>Psychology</td>
</tr>
<tr>
<td>Geology</td>
<td>Recreation Leadership</td>
</tr>
<tr>
<td>German</td>
<td>Sociology</td>
</tr>
<tr>
<td>Health &amp; Safety</td>
<td>Spanish</td>
</tr>
<tr>
<td>History</td>
<td>Speech, Drama, Radio, TV</td>
</tr>
<tr>
<td>Home Economics</td>
<td>Veterinary Medicine</td>
</tr>
<tr>
<td>Lab Technician</td>
<td>Zoology</td>
</tr>
<tr>
<td>Law</td>
<td></td>
</tr>
</tbody>
</table>

67
TRANSFER PROGRAMS

IMPORTANT: A student should consult the catalog of the college or university to which he plans to transfer in order to plan the program that will meet transfer requirements. Counselors can help in interpreting the college or university courses in terms of the parallel courses offered at Chaffey. In the following pages the requirements and some suggested programs for meeting them are listed by majors for the state university and some other universities and four-year colleges.

ARCHITECTURE

Three California schools offer architectural curriculums. The University of California at Berkeley and the University of Southern California offer degrees in architecture, and California State Polytechnic College offers a degree in architectural engineering.

Students should consult the catalog of the institution they wish to attend for specific lower division requirements. Because of the varied curriculums and required course sequences, it is generally advisable for architecture majors to transfer after one year at Chaffey.

BUSINESS ADMINISTRATION

Students planning to continue work toward a Bachelor's degree in Business Administration should satisfy the lower-division general education requirements of the college or university to which they plan to transfer. Preparation for the major at most schools requires Economics 1a, 1b; Accounting 1a, 1b; and Mathematics 2 or 3a and 3b.

There is great variation among the practices of universities and colleges regarding the granting of lower-division credit or elective credit for business courses taken at Chaffey College. Students should consult with their counselor, the catalog of the transfer institution, and the faculty of the Business Education Division.

DENTISTRY

SUGGESTED PROGRAM

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1a, 1b</td>
<td>6</td>
<td>History 17a, 17b</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 1a, 1b</td>
<td>10</td>
<td>Chemistry 8</td>
<td>3</td>
</tr>
<tr>
<td>Foreign language</td>
<td>8</td>
<td>Chemistry 5</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics 53a</td>
<td>1</td>
<td>Zoology 1a, 1b</td>
<td>10</td>
</tr>
<tr>
<td>Speech 1 or 55</td>
<td>3 or 1</td>
<td>Foreign language</td>
<td>4 or 8</td>
</tr>
<tr>
<td>Physics 2a*, 2b</td>
<td>8</td>
<td>Social Science or Humanities</td>
<td>6</td>
</tr>
<tr>
<td>P. E.</td>
<td>1</td>
<td>Hygiene 1</td>
<td>2</td>
</tr>
<tr>
<td>P. E.</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Assumes mathematics through trigonometry in high school.

The student should be sure to consult the catalog of the school to be attended for specific requirements.
EDUCATION

Elementary, Secondary and Junior College

Credentials and requirements for credentials to teach in California public schools are being changed. Current catalogs, announcements, and counselors should be consulted frequently. In planning teaching careers, and specifically in developing the first two years' program, students should be guided by the following:

1. Primary concern should be the general education requirements of the college in which the upper-division work will be taken.

2. An academic major should be prepared for by taking the lower-division prerequisites. Secondary teaching requires a major and a minor in subjects commonly taught in the public high schools. Elementary teaching may permit a diversified major.

3. Admission to the teacher education program at the four-year institution usually occurs early in, or during the registration for, the junior year.

4. Teaching credentials require demonstration of special skills and qualifications usually checked in the junior year. These include academic achievement, proficient communication, adequate physical and mental health, and satisfactory character. The elementary specialization also requires proficiency in the fundamental skills of arithmetic, handwriting, reading and spelling.

5. At least one year of postgraduate work is required for all teaching credentials. Postponement of this requirement is permitted for elementary teachers.

6. The junior college credential requires a master's or doctor's degree in a subject field. The teacher of a vocational subject may substitute occupational experience for part of the academic requirement.

ENGINEERING

Students planning to enter college to study engineering are urged to take the Mathematics 12a qualifying examination before graduating from high school. If they do not qualify, they may be able to take courses during the summer session to qualify for Mathematics 12a in their first term at Chaffey College. Those who can not meet this requirement before entering Chaffey should plan to take longer than two years to complete the standard lower division course in engineering.

The following engineering program is typical, but is not intended to fulfill the requirements of every college. The student is urged to consult the catalog of the institution to which he plans to transfer.
## TRANSFER PROGRAMS

### Freshman Year | Units | Sophomore Year | Units
--- | --- | --- | ---
Mathematics 12a, 12b | 10 | Physics 4b, 4c | 8
Chemistry 1a, 1b | 10 | Engineering 45, 35 | 6
*Engineering 25a, 25b | 3, 2 | English 1a, 1b | 6
Engineering 1a | 3 | Mathematics (linear algebra) | 3
Physics 4a | 4 | §Engineering 1b or
†Mathematics 53a, 53b | 1-1 | Mathematics 14ab | 3 or 4
Speech 55 | 1 | Political Science 2 | 3
P. E. | 1 | History 2 | 3

Electives in mathematics, chemistry, physical sciences or engineering may be added to bring the total number of transferable units up to a maximum of seventy.

* Students are advised to consult with a counselor and/or a member of the Engineering Department before completing registration in an engineering course.

† A student who can show proficiency in slide rule will be excused from Mathematics 53a, 53b. All other engineering students are required to take this course.

§ Agricultural, civil, geological, and mining engineers should register for Engineering 1b; all others will take Mathematics 14ab.

Attention: To enter upper division work with junior standing in most colleges of engineering, students are required to pass a comprehensive examination covering the work of the first two years.

## HOME ECONOMICS

The home economics program listed below fulfills the lower division requirements of most four-year colleges. The student is urged to study the requirements listed in the catalog of the institution to which he plans to transfer.

### Freshman Year | Units | Sophomore Year | Units
--- | --- | --- | ---
Biology 1a | 4 | Political Science 2 | 3
Psychology 1a | 3 | History 2 | 3
English 1a, 1b | 6 | Economics 1a | 3
Speech 1 | 3 | Physical Education | 1
Physical Education | 1 | Music 27a | 3
Hygiene 1 | 2 | Sociology 2 | 3
Home Economics 10 | 2 | Home Economics 2a, 2b | 6
Home Economics 1a | 3 | Home Economics 23 | 3
Art 2a, 2b | 4 | Home Economics 5a, 5b | 4
Chemistry 2A or 1a | 5 | Home Economics 21 | 2
JOURNALISM

The journalism program below satisfies in part the requirements for most four-year institutions. However the student should check carefully with the catalog of the school to which he expects to transfer.

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1a, 1b</td>
<td>6</td>
<td>Foreign language</td>
<td>4-8</td>
</tr>
<tr>
<td>English 2a, 2b (Journalism)</td>
<td>6</td>
<td>Science (biological or physical)</td>
<td>8</td>
</tr>
<tr>
<td>Foreign language</td>
<td>8</td>
<td>History 17a, 17b or History 2</td>
<td></td>
</tr>
<tr>
<td>Science (biological or physical)</td>
<td>4</td>
<td>and Political Science 2</td>
<td>6</td>
</tr>
<tr>
<td>History 4a, 4b</td>
<td>6</td>
<td>Economics 1a</td>
<td>6</td>
</tr>
<tr>
<td>Speech 1</td>
<td>3</td>
<td>English 36a, 36b</td>
<td>6</td>
</tr>
<tr>
<td>P. E.</td>
<td>1</td>
<td>Hygiene 1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Psychology 1a</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P. E.</td>
<td>1</td>
</tr>
</tbody>
</table>

LAW

Pre-legal students planning to attend the University of California upon graduation from Chaffey College should meet requirements for upper division status in the College of Letters and Science and at the same time meet the following standards as set by the University of California:

1. The pre-legal student should follow a plan of study which will insure adequate foundations for a broad culture. He should have:
   (a) A well-grounded facility in the use of English.
   (b) The use of at least one modern foreign language so that it may be used freely in reading.
   (c) A familiarity with the outlines of history.
   (d) An acquaintance with the great philosophers and with the progress and significance of philosophic thought.
   (e) Mastery of elementary logic and mathematics and some acquaintance with their applications in contemporary life.
   (f) An introduction to science, particularly to chemistry and physics.
   (g) A thorough knowledge of the elements of social discipline including the essentials of economics, government, psychology.

2. The pre-legal student should acquire intellectual discipline and experience derived from intensive work for a substantial time in a selected field of study. There is no specific pre-legal major. A student may enter law through various majors.

3. The pre-legal student should begin with the cultivation of professional standards of study as soon as possible.
### Transfer Programs

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1a, 1b</td>
<td>6</td>
<td>Economics 1a, 1b</td>
<td>6</td>
</tr>
<tr>
<td>Foreign language</td>
<td>8</td>
<td>Philosophy 6a, 6b</td>
<td>6</td>
</tr>
<tr>
<td>Political Science 1a, 1b</td>
<td>6</td>
<td>Speech 1</td>
<td>3</td>
</tr>
<tr>
<td>History 4a, 4b</td>
<td>6</td>
<td>Science</td>
<td>4-8</td>
</tr>
<tr>
<td>Science</td>
<td>4</td>
<td>History 17a, 17b</td>
<td>6</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>Psychology 1a</td>
<td>3</td>
</tr>
<tr>
<td>P. E.</td>
<td>1</td>
<td>P. E.</td>
<td>1</td>
</tr>
</tbody>
</table>

### Lithography

See Pre-printing Management

### Medicine

Ordinarily the requirement for admission to the first-year class of a school of medicine is a baccalaureate degree; but in exceptional instances students who have completed three full academic years (90 semester units toward a baccalaureate degree) at an approved college or university may be admitted. The academic years should be devoted to obtaining as broad an education as possible.

The two-year curriculum as outlined below will prepare a medical student for any of the accredited medical schools. This program assumes (1) a language deficiency from high school and (2) a mathematical background through trigonometry. The cultural courses required by each university vary; therefore, these courses have been left for completion in the university to which the student transfers. Crowded laboratory facilities in all universities lead to the recommendation that most of the required sciences be completed in junior college. However, the student who wishes to enter a university with upper-division standing should consult the requirements of the institution.

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1a, 1b</td>
<td>6</td>
<td>Chemistry 5</td>
<td>4</td>
</tr>
<tr>
<td>German or French</td>
<td>8</td>
<td>Chemistry 8</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 1a, 1b</td>
<td>10</td>
<td>German or French</td>
<td>4 or 8</td>
</tr>
<tr>
<td>Mathematics 53a</td>
<td>1</td>
<td>Zoology 1a, 1b</td>
<td>10</td>
</tr>
<tr>
<td>Physics 2a, 2b</td>
<td>8</td>
<td>History 2 and Political Science</td>
<td>2</td>
</tr>
<tr>
<td>Speech 55</td>
<td>1</td>
<td>Science 2, or History 17a, 17b</td>
<td>2</td>
</tr>
<tr>
<td>P. E.</td>
<td>1</td>
<td>Hygiene 1</td>
<td>1</td>
</tr>
</tbody>
</table>

72
TRANSFER PROGRAMS

MEDICAL TECHNOLOGY

Below is a typical curriculum designed for medical technology at a state college with a major in bacteriology which prepares students for positions in hospitals, public health departments and physicians' laboratories.

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign language</td>
<td>8</td>
<td>Zoology 1a, 1b</td>
<td>10</td>
</tr>
<tr>
<td>Chemistry 1a, 1b</td>
<td>10</td>
<td>Bacteriology 1</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics 53a</td>
<td>1</td>
<td>History 2 and Political Science</td>
<td>2</td>
</tr>
<tr>
<td>Physics 2a, 2b</td>
<td>8</td>
<td>Philosophy 6a</td>
<td>3</td>
</tr>
<tr>
<td>English 1a, 1b</td>
<td>6</td>
<td>Art or Music</td>
<td>3</td>
</tr>
<tr>
<td>Speech 1</td>
<td>3</td>
<td>Hygiene</td>
<td>2</td>
</tr>
<tr>
<td>Psychology 1a</td>
<td>3</td>
<td>Chemistry 5</td>
<td>4</td>
</tr>
<tr>
<td>P. E.</td>
<td>1</td>
<td>P. E.</td>
<td>1</td>
</tr>
</tbody>
</table>

MUSIC

The Music Department provides participation in musical activities for the general college student as well as a course of study for the prospective music major. Performing organizations open to all students include the College Band, Concert Choir, Men's and Women's Glee Clubs, and the Brass, String and Woodwind Ensembles.

THE MUSIC MAJOR

Both the avocational and vocational needs of the students are met in these courses, covering nearly all of the lower-division work as given by conservatories of music or by universities and state colleges. Students should consult the catalog of the appropriate state college, university or conservatory for the specific requirements covering the public school music major, music theory major, or the applied music major.

In addition to Music 1a, 1b, Music 2a, 2b, and Music 3a, 3b, transfer music majors must include the following:

Piano: A basic facility on the piano is essential to the student who wishes to major in music. Music 21a, b, c, d, or the satisfactory completion of a proficiency examination, is required of all music majors. Unit credit may be assigned to private study (Music 17) at the discretion of the department.

Performance Requirement: All music majors are expected to participate in a performance organization each semester. These organizations include College Band (Music 46), Men's Glee Club (Music 9), Women's Glee Club (Music 8), Concert Choir (Music 16), String Ensemble (Music 18), Woodwind Ensemble (Music 19), and Brass Ensemble (Music 20).

All music majors should have at least one semester of Glee Club or Choir to improve general musicianship, increase facility in sight-reading, and to become acquainted with standard choral literature.
TRANSFER PROGRAMS

A minimum of six units of credit from performance courses is usually required for four semesters' work. Due to lack of uniformity in amounts of credit granted by colleges and universities for performance courses, the student is advised to investigate credit granted in the college to which he may wish to transfer.

Theory: A basic music test will be given to all prospective music majors and minors at the beginning of the fall term.

Students who do not demonstrate satisfactory knowledge of fundamentals may be required to take Music 11 (Fundamentals of Music) concurrently with Music 1a, 1b. Music 11 cannot substitute for Music 1a, 1b in the program of the music major or minor, however.

Those who plan to continue beyond the junior college should choose courses somewhat as follows:

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 1a, 1b</td>
<td>6</td>
<td>Music 2a, 2b</td>
<td>6</td>
</tr>
<tr>
<td>Music 21a, 21b or Music 17</td>
<td>2</td>
<td>Music 3a, 3b</td>
<td>6</td>
</tr>
<tr>
<td>Performance courses and</td>
<td></td>
<td>Music 21c, 21d or Music 17</td>
<td>2</td>
</tr>
<tr>
<td>applied music</td>
<td>4.5</td>
<td>Performance courses and</td>
<td></td>
</tr>
<tr>
<td>English 1a, 1b</td>
<td>6</td>
<td>applied music</td>
<td>4.5</td>
</tr>
<tr>
<td>Science</td>
<td>8</td>
<td>History 17a, 17b, or Political</td>
<td></td>
</tr>
<tr>
<td>Foreign language</td>
<td>8</td>
<td>Science 2 and History 2</td>
<td>6</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>Speech 1</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Foreign language</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical Education</td>
<td>1</td>
</tr>
</tbody>
</table>

NURSING

Colleges and universities which have basic programs in nursing require lower-division courses in general education for admission to the major in nursing. These courses may be obtained at Chaffey College.

Students planning to transfer must consult the catalog of the college or university of their choice for specific requirements. If possible, counseling should be sought from the School of Nursing at the senior institution.

In general, the following courses are required:

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1a, 1b</td>
<td>6</td>
<td>Speech 1</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry</td>
<td>5-13</td>
<td>Anatomy 1</td>
<td>4</td>
</tr>
<tr>
<td>Bacteriology 1 or 2</td>
<td>4</td>
<td>Physiology 1</td>
<td>4</td>
</tr>
<tr>
<td>Home Economics 1c</td>
<td>3</td>
<td>Psychology 1b</td>
<td>3</td>
</tr>
<tr>
<td>Physics 10</td>
<td>3</td>
<td>Sociology 1a</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 1a</td>
<td>3</td>
<td>Anthropology 2</td>
<td>3</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>P. E.</td>
<td>1</td>
</tr>
<tr>
<td>P. E.</td>
<td>1</td>
<td>History 17a, 17b, or</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>History 2 and Political</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Science</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Foreign language is required in some schools.
PHARMACY

Admission to the School of Pharmacy at the University of Southern California or U. C. Berkeley requires 60 units of college pre-pharmacy work which may be obtained at Chaffey College.

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1a, 1b</td>
<td>6</td>
<td>Physics 2a, 2b</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 1a, 1b</td>
<td>10</td>
<td>Psychology 1a</td>
<td>3</td>
</tr>
<tr>
<td>Botany 1</td>
<td>5</td>
<td>Zoology 1a, 1b</td>
<td>10</td>
</tr>
<tr>
<td>Mathematics C (or Mathematics 3a, 3b for U C)</td>
<td>3 or 6</td>
<td>History 2 &amp; Political Science 2 or History 17a, 17b</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 53a</td>
<td>1</td>
<td>Speech 1 or 55</td>
<td>3 or 1</td>
</tr>
<tr>
<td>History 4a, 4b</td>
<td>6</td>
<td>Hygiene 1</td>
<td>2</td>
</tr>
<tr>
<td>P. E.</td>
<td>1</td>
<td>Economics 1a (USC)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P. E.</td>
<td>1</td>
</tr>
</tbody>
</table>

PHYSICAL EDUCATION

Physical education majors should participate in two P. E. activities each semester and should consult the catalog of the institution to which they are planning to transfer for variation in this suggested program:

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>P. E. Activities</td>
<td>1</td>
<td>P. E. Activities</td>
<td>1</td>
</tr>
<tr>
<td>English 1a, 1b</td>
<td>6</td>
<td>P. E. 20, 24</td>
<td>4</td>
</tr>
<tr>
<td>Speech 1</td>
<td>3</td>
<td>Hygiene 1</td>
<td>2</td>
</tr>
<tr>
<td>Biology and Physical Sciences</td>
<td>8</td>
<td>Anatomy 1</td>
<td>4</td>
</tr>
<tr>
<td>Home Economics</td>
<td>2</td>
<td>Physiology 1</td>
<td>4</td>
</tr>
<tr>
<td>Social sciences</td>
<td>6</td>
<td>Psychology 1a</td>
<td>3</td>
</tr>
<tr>
<td>P. E. 26</td>
<td>2</td>
<td>History 2 &amp; Political Science 2</td>
<td>6</td>
</tr>
<tr>
<td>P. E. 23</td>
<td>2</td>
<td>Literature, art &amp; music</td>
<td>6</td>
</tr>
</tbody>
</table>

PRINTING MANAGEMENT

Candidates for a Bachelor of Science degree in Printing Management offered at Los Angeles State College may fulfill their lower-division requirements at Chaffey College.

After completing entrance examinations with a standard suitable to qualify for this curriculum, the student should take the standard basic lower-division courses as listed below:

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology 1a</td>
<td>3</td>
<td>Philosophy 6a</td>
<td>3</td>
</tr>
<tr>
<td>English 1a, 1b</td>
<td>6</td>
<td>Lithography 2a, 2b</td>
<td>6</td>
</tr>
<tr>
<td>Lithography 1a, 1b</td>
<td>12</td>
<td>Art 5a, 5b</td>
<td>4</td>
</tr>
<tr>
<td>Biology 1a</td>
<td>4</td>
<td>Accounting 1a, 1b</td>
<td>8</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>Chemistry 2A</td>
<td>5</td>
</tr>
<tr>
<td>Speech 1</td>
<td>3</td>
<td>Economics 1a</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>History 2</td>
<td>3</td>
<td>Political Science</td>
<td>3</td>
</tr>
</tbody>
</table>
THEATRE AND SPEECH ARTS

Theatre and speech arts students planning to attend one of the California state colleges or universities upon graduation from Chaffey College should meet the requirements for upper-division status.

Courses suggested are designed to provide a well-grounded facility in the use of both oral and written English. In addition, the curriculum provides necessary background in the humanities, with particular emphasis on literature, history, music and art. These studies are supplemented with practical experience in dramatic productions and forensics contests, in which all theatre and speech arts students are expected to participate.

The courses below in general meet the lower-division plans of California colleges and universities, but the student should carefully select his courses to meet requirements listed in the catalog of the school in which he will complete his upper-division work.

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1a, 1b</td>
<td>6</td>
<td>History 2 and Political Science 2</td>
<td>2</td>
</tr>
<tr>
<td>Speech 1, 2a</td>
<td>6</td>
<td>or History 17a, 17b</td>
<td>6</td>
</tr>
<tr>
<td>Science</td>
<td>8</td>
<td>Music 2a or 2b</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 1a</td>
<td>3</td>
<td>English 5a, 5b</td>
<td>6</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>Speech 4 or 8</td>
<td>2</td>
</tr>
<tr>
<td>Drama 1, 2</td>
<td>6</td>
<td>English 34e, (Drama)</td>
<td>3</td>
</tr>
<tr>
<td>P. E.</td>
<td>1</td>
<td>Philosophy 6a</td>
<td>3</td>
</tr>
<tr>
<td>Social Science</td>
<td>3</td>
<td>Foreign Language</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Speech 6</td>
<td></td>
</tr>
</tbody>
</table>

VETERINARY MEDICINE

University of California at Davis

The following curriculum, with the addition of elementary statistics, satisfies both the pre-veterinary and the general requirements for the Animal Science major at Davis.

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1a, 1b</td>
<td>6</td>
<td>Zoology 1a, 1b</td>
<td>10</td>
</tr>
<tr>
<td>Chemistry 1a, 1b</td>
<td>10</td>
<td>Physics 2a, 2b</td>
<td>8</td>
</tr>
<tr>
<td>Bacteriology 1 or Botany 1</td>
<td>4 or 5</td>
<td>Chemistry 5</td>
<td>4</td>
</tr>
<tr>
<td>Speech 55</td>
<td>1</td>
<td>History 2</td>
<td>3</td>
</tr>
<tr>
<td>Political Science 2</td>
<td>3</td>
<td>Chemistry 8</td>
<td>3</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>Economics 1a</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 53a</td>
<td>1</td>
<td>P. E.</td>
<td>1</td>
</tr>
<tr>
<td>P. E.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

76
Lower Division Requirements
Lower-Division Requirements

LOWER-DIVISION REQUIREMENTS OF COLLEGES AND UNIVERSITIES

Four-year colleges and universities divide their work into Lower Division and Upper Division. Lower Division refers to the first two years of study, which can usually be completed in a junior college.

Students taking their lower-division work at Chaffey should register for those courses which meet the lower-division requirements of the four-year college to which they plan to transfer. Summaries of lower-division requirements of representative California universities and colleges appear below. In every case, students planning to transfer to four-year schools should consult college catalogs for detailed requirements.

Four-year institutions have their own requirements to be completed in high school before the student can be accepted as a freshman. For full transfer status a junior college student should have completed the prescribed high-school program. However, high-school deficiencies can often be made up in junior college. The following description applies only to the University of California, but similar arrangements can be made to qualify the student to enter most other colleges.

CALIFORNIA STATE COLLEGES

(California Polytechnic, Long Beach, Los Angeles, Orange, San Diego, San Francisco, San Jose, and others.)

A student who is eligible for a state college is one who has earned 14 semester credits of A or B in his last 3 years in high school, including six academic subjects (exclusive of P.E., military science, and remedial courses)

or

ten semester credits of A or B grades and attained the 30th percentile or better on the college norm of a standardized aptitude test acceptable to the state college.

A student who meets the above requirements and who chooses to enter the junior college is entitled to transfer at any time to the state college of his choice provided he has maintained a C (2.0) grade average while at the junior college.

A student who enters the junior college with grade deficiencies from high school may transfer to a state college after completing 60 or more acceptable units in junior college with a C (2.0) average or 24 units with a B (3.0) average.
**LOWER DIVISION REQUIREMENTS**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Psychology 1a</td>
<td>3 units</td>
</tr>
<tr>
<td>B. Social Science</td>
<td>9-12 units</td>
</tr>
<tr>
<td>C. Natural Science</td>
<td>9-12 units</td>
</tr>
<tr>
<td>1. Biological</td>
<td></td>
</tr>
<tr>
<td>2. Physical</td>
<td></td>
</tr>
<tr>
<td>D. English 1a</td>
<td>3 units</td>
</tr>
<tr>
<td>Speech</td>
<td>3 units</td>
</tr>
<tr>
<td>E. Literature, philosophy, or arts</td>
<td>6-12 units</td>
</tr>
<tr>
<td>F. Hygiene</td>
<td>2 units</td>
</tr>
<tr>
<td>G. Foreign language (required in some departments)</td>
<td>0-12 units</td>
</tr>
<tr>
<td>H. General electives from the above (A-F)</td>
<td>9-12 units</td>
</tr>
<tr>
<td>I. Lower-division requirements for the major (see state college catalog)</td>
<td></td>
</tr>
</tbody>
</table>

Since there are variations in the above requirements for each institution, the student is urged to see the catalog of his institutional choice.

**UNIVERSITIES OF CALIFORNIA**

**QUALIFYING FOR TRANSFER TO UNIVERSITY OF CALIFORNIA:** Subject and Grade Requirements:

1. **Eligible Students:**
   - For full transfer status the high-school program should include the following minimum requirements with average grade of B:
     - (a) History and civics — 1 year
     - (b) English — 3 years
     - (c) Mathematics — algebra and geometry
     - (d) Junior or senior lab science — 1 year
     - (e) One foreign language — 2 years
     - (f) Advanced subject (science, math or language)

   Students achieving the above are eligible as freshmen and entitled to transfer at any time provided they maintain a 2.0 (C) grade average at Chaffey. Admission to the University does not necessarily mean admission to a specific college — for example, engineering.

2. **Ineligible Students:**
   - a. Subject deficiencies:
     - A student with subject deficiencies may remove such deficiencies by achieving a C grade or better in similar courses in junior college. Two subject deficiencies will be waived if the applicant presents 56 units of college work with a 2.4 average.
   - b. Scholarship deficiencies:
     - Scholarship deficiencies may be removed by college courses of appropriate content and amount completed with satisfactory scholarship in junior college. One must complete 56 units or more of transfer courses with a grade point average of 2.4.
     - High-school students otherwise ineligible may qualify for entrance on the basis of the College Entrance Examination.
LOWER DIVISION REQUIREMENTS

UNIVERSITY OF CALIFORNIA AT BERKELEY
COLLEGE OF LETTERS AND SCIENCE

A. English 1a, 1b ................................................................. 6 units
*B. One foreign language .................................................... 12 units
*C. Algebra and plane geometry
   physical and biological .................................................. 12 units
D. Natural sciences (must be selected from approved list§)
   ................................................................. 12 units
§E. Social science .............................................................. 12 units
§F. Humanities ........................................................................ 12 units
G. Lower-division requirements for the major (see U. of C. catalog)
   ................................................................. 12 units
*High-school courses may be used toward fulfillment of these requirements.
§See U. C. catalog.

COLLEGE OF BUSINESS ADMINISTRATION

The two-year junior college program should include the following subjects:

A. English ................................................................. 9 units
   1. English 1a, 1b, or Speech 1, 2a and
   2. One additional course in English composition, speech or literature.
B. Accounting 1a, 1b ......................................................... 8 units
C. Mathematics 12a or Mathematics 3a, 3b ....................... 5 or 6 units
D. Statistics 1 ................................................................. 3 units
*E. One foreign language .................................................... 8 units
F. Science ............................................................................ 6 units
G. Economics 1a, 1b ............................................................. 6 units
H. Psychology 1a or Sociology 1a and either
   Anthropology 2 or Psychology 33 ..................................... 6 units

The above requirements parallel those of the College of Letters and Science, but one may fulfill instead the requirements of one of the various colleges of applied sciences.
*High-school courses may be used toward fulfillment of these requirements.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES
COLLEGE OF LETTERS AND SCIENCE

See catalog for special requirements in field of concentration and for exemptions and deferments in certain majors. The satisfaction of the Berkeley requirements will also be acceptable.
*A. Foreign language—16 units in one or more languages.
*B. Algebra and plane geometry.
   C. English 1a—at least three units with a grade of C of better.
LOWER DIVISION REQUIREMENTS

D. Natural sciences:
   §1. Physical science—5 units.
   §2. Biological science—5 units.

E. Social Sciences:
   1. History 4a, 4b or History 17a, 17b (preferably 17a, 17b since
      it fulfills the State history and political science requirement).
   §2. Six units in two social sciences exclusive of history.

F. Humanities:
   Any two of the following three groups:
   1. English 36a, 36b
   2. Philosophy 6a, 6b
   3. Art 1a, 1b or Music 2a, 2b or Music 27a, 27b

§G. Lower-division requirements for the major.
*High-school credit may be used toward fulfillment of these requirements.

See UCLA catalog.

SCHOOL OF BUSINESS ADMINISTRATION

Follow the program of Letters and Science (above) except that 8 units
in one language are satisfactory and the following courses are required:
A. Economics 1a, 1b ................................................................. 6 units
B. Accounting 1a, 1b ................................................................. 6 units
C. Mathematics 3a, 3b ................................................................. 6 units

One may enter from other colleges such as Engineering, Agriculture,
etc., if junior standing is achieved.

UNIVERSITY OF CALIFORNIA AT RIVERSIDE

A. English 1a, 1b
B. History 17a, 17b
C. History 4a, 4b

D. One year of laboratory science chosen from:

Chemistry 1a, 1b
Physics 2a, 2b
Botany 1 and 2
Zoology 1a, 1b
Chemistry 1a and Chemistry 8

Anatomy and Physiology
Geology 1a, 1b
Biology 1a, 1b (if 1a is taken it
must be accompanied by 1b.)

E. Completion of course 3 of a foreign language.

F. One year sequence in Humanities chosen from:

English 5a, 5b
English 34a, 34b
English 36a, 36b

Music 2a, 2b
Philosophy 6a, 6b
Art 1a, 1b

G. One year course chosen from:

Political Science 1a, 1b
Psychology 1a, 1b
Economics 1a, 1b

Geography 1a, 1b
Sociology 1a, 1b
H. Breadth requirement: 6 units of work in a division outside the major field.
I. Lower-division requirements for the major: (see UCR catalog).

UNIVERSITY OF CALIFORNIA AT SANTA BARBARA
A. English 1a, 1b ................................................................. 6 units
*B. Foreign language (12 units in one or 16 units in two)
**C. Humanities ................................................................. 12-14 units
**D. History, social science, psychology ................................ 12 units
**E. Natural science ............................................................ 12 units
   1. Biological
   2. Physical
F. Lower-division requirements for the major (see UCSB catalog)
*High-school credit may be used toward fulfillment of these requirements.
** See UCSB catalog.

PRIVATE COLLEGES AND UNIVERSITIES

UNIVERSITY OF SOUTHERN CALIFORNIA
COLLEGE OF LETTERS, ARTS, AND SCIENCES

A. General Requirements:
   1. English 1a, 1b ................................................................. 6 units
   2. History 2 and Political Science 2 or
      History 17a, 17b ................................................................. 6 units
   3. One foreign language ........................................................ 12 units

B. Humanities ......................................................................... 12 units
   At least one 3-unit course in each of the following:
   1. Art:
      Art 1a, 1b; Music 2a, 2b; Music 27a, 27b
   2. Literature:
      English 36a, 36b; English 5a, 5b; English 34a, 34b, 34c, 34d
   3. Philosophy 6a, 6b

C. Natural Sciences ................................................................. 8 units
   Two courses from the following:
   Astronomy, Biology 2, Biology 1a, 1b; Zoology 1a, 1b; Chemistry 2A; Chemistry 1a, 1b; Geology 1a, 1b; Physics 2a, 2b; Physics 10.

D. Social sciences ................................................................. 8 units
   1. History 4a or History 4b
   2. One of the following courses:
      Anthropology 1, 2; Economics 19; Economics 1a, 1b; Geography 1a, 1b; Political Science 7; Political Science 1a; Psychology 1a, Sociology 1a, 1b.
### SCHOOL OF BUSINESS

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Economics 1a, 1b</td>
<td>6</td>
</tr>
<tr>
<td>B. English 1a, 1b</td>
<td>6</td>
</tr>
<tr>
<td>C. Mathematics A</td>
<td>5</td>
</tr>
<tr>
<td>D. Natural Sciences</td>
<td>8</td>
</tr>
<tr>
<td>E. Accounting 1a, 1b</td>
<td>8</td>
</tr>
<tr>
<td>F. Humanities</td>
<td>3</td>
</tr>
<tr>
<td>G. History 2 and Political Science 2</td>
<td>6</td>
</tr>
<tr>
<td>H. Social Sciences</td>
<td>9</td>
</tr>
</tbody>
</table>

- One course from approved list*
- Three courses from approved list*

* See USC catalog.

### CLAREMONT MEN'S COLLEGE

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. English 1a, 1b</td>
<td>6</td>
</tr>
<tr>
<td>B. History 4a, 4b</td>
<td>6</td>
</tr>
<tr>
<td>C. Political Science 1a, 1b</td>
<td>6</td>
</tr>
<tr>
<td>D. Foreign language</td>
<td>12</td>
</tr>
<tr>
<td>(May be met by achievement test.)</td>
<td></td>
</tr>
<tr>
<td>E. Accounting 1a, 1b</td>
<td>8</td>
</tr>
<tr>
<td>(This is not a requirement for majors in humanities and the fine arts.)</td>
<td></td>
</tr>
<tr>
<td>F. Economics 1a, 1b</td>
<td>6</td>
</tr>
<tr>
<td>G. English 36a, 36b or English 5a, 5b</td>
<td>6</td>
</tr>
<tr>
<td>H. One year course from the following:</td>
<td></td>
</tr>
<tr>
<td>Chemistry 1a, 1b</td>
<td></td>
</tr>
<tr>
<td>Physics 2a, 2b</td>
<td></td>
</tr>
<tr>
<td>Geology 1a, 1b</td>
<td></td>
</tr>
<tr>
<td>I. Electives from:</td>
<td></td>
</tr>
<tr>
<td>Art 1a, 1b</td>
<td></td>
</tr>
<tr>
<td>Geography 1a, 1b</td>
<td></td>
</tr>
<tr>
<td>Philosophy 6a, 6b</td>
<td></td>
</tr>
<tr>
<td>Sociology 1a, 1b</td>
<td></td>
</tr>
<tr>
<td>Speech 1 and 2</td>
<td></td>
</tr>
<tr>
<td>J. Psychology 1a</td>
<td>3</td>
</tr>
<tr>
<td>K. Mathematics 3a, 3b</td>
<td>6</td>
</tr>
<tr>
<td>L. Statistics 1</td>
<td>3</td>
</tr>
</tbody>
</table>

### POMONA COLLEGE

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. English 1a, 1b</td>
<td>6</td>
</tr>
<tr>
<td>*B. Natural sciences</td>
<td>8</td>
</tr>
<tr>
<td>*C. Social sciences</td>
<td>12</td>
</tr>
<tr>
<td>*D. Literature, art or music</td>
<td>3</td>
</tr>
<tr>
<td>E. Philosophy 6a</td>
<td>3</td>
</tr>
<tr>
<td>F. Lower-division requirements for major.</td>
<td>3</td>
</tr>
</tbody>
</table>

* See Pomona College catalog.
LOWER DIVISION REQUIREMENTS

UNIVERSITY OF REDLANDS

A. English 1a, 1b ................................................................. 6 units
B. Speech 1 ........................................................................... 3 units
*C. Foreign language ........................................................... 8 units
D. Foreign language or literature ........................................... 8 units
   (may include B) if language taken in college
E. Science and mathematics (one physical and one
   biological science—see Redlands catalog for list) ............ 12 units
F. History 4a, 4b ................................................................... 6 units
G. Courses from two areas:
   Philosophy 6a, 6b  English 36a, 36b
   Art 1a, 1b  English 5a, 5b
   Music 2a, 2b
H. History 17a, 17b; or History 2 and either Political
   Science 2 or Political Science 1a ........................................... 6 units
I. From Economics 1a, 1b, Geography 1a, 1b, History 39,
   Psychology 1a, Sociology 1a, 1b, Sociology 2, a total of... 6 units
J. Social Science: Economics 1a, 1b, Geography 1a, 1b,
   History 39, Psychology 1a, Sociology 1a, 1b or
   Sociology 2 ........................................................................ 3 units
K. Lower-division requirements for the major (see University of
   Redlands catalog.)

*High-school credit may be used toward satisfying this requirement.

LA VERNE COLLEGE

A. English 1a, 1b ................................................................. 6 units
B. History 4a, 4b ................................................................... 6 units
C. Natural science ............................................................... 8 units
D. Speech 1 ........................................................................... 3 units
E. Art 1a or 1b ...................................................................... 3 units
F. History 17a, 17b ............................................................. 6 units
G. Psychology 1a ................................................................... 3 units
H. Philosophy 6a .................................................................... 3 units
I. Hygiene ............................................................................. 2 units
J. English 5a, 5b, 34, or 36a, 36b ............................................. 3 units
K. Language—1 year in college or 2 high-school years.
L. Lower-division requirements for the major (see La Verne College
   catalog).

Prospective teachers should take 12 units of laboratory science (6 units
each of physical science and biological science).
### LOWER DIVISION REQUIREMENTS

#### UPLAND COLLEGE

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. English 1a, 1b</td>
<td>6 units</td>
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<tr>
<td>B. Mathematics</td>
<td>3 units</td>
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<tr>
<td>C. Science</td>
<td>12 units</td>
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<tr>
<td>1. Biological</td>
<td>8 units</td>
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<tr>
<td>2. Physical</td>
<td>4 units</td>
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<tr>
<td>D. History 4a, 4b</td>
<td>6 units</td>
</tr>
<tr>
<td>E. Physical education</td>
<td>2 units</td>
</tr>
<tr>
<td>*F. Foreign language</td>
<td>8 units</td>
</tr>
<tr>
<td>G. History 17a, 17b</td>
<td>6 units</td>
</tr>
<tr>
<td>H. Philosophy 6a</td>
<td>3 units</td>
</tr>
<tr>
<td>I. Economics 1a, Sociology 1a, Political Science 1a, Geography 1a, Anthropology 2</td>
<td>3 units</td>
</tr>
<tr>
<td>J. Music 2a, 2b, Music 27a, 27b, Art 1a, 1b</td>
<td>6 units</td>
</tr>
<tr>
<td>K. Lower-division requirements for major (see Upland College catalog)</td>
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</tbody>
</table>

* See Upland College catalog for specific requirements.

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*Library under night lights*
Dental Assisting

Library

Ceramics
Course Descriptions
Announcement of Courses

The courses on the following pages are alphabetically and numerically arranged, except for the courses in the Business Education division which are alphabetically arranged under Business Education.

The first line indicates the official designation of the course, a descriptive title, and the number of units each semester. The second line indicates prerequisites and concurrent requirements. Next there is a summary of course content. The last line is a statement of the number of class and laboratory hours per week.

Courses that are divided into parts (semesters) marked a, b, c, or d are usually taken in that sequence. A course number not followed by a small letter (Math A, Merchandising 26, Chemistry 2A) indicates that the course is complete in one semester. The course designation "ab" means that both a and b are taken in a single semester.

AERONAUTICS

51a, 51b, 51c THEORY OF AIRPLANE ENGINES (5-5-5)

Concurrent requirement: Aeronautics 52a, 52b, 52c. Student must be carrying 14 units.

Theory of airplane engines, ignition and electricity, carburetion, engine instruments, engine accessories, operation maintenance, and trouble shooting. This course leads to FAA "E" license. Class: 5 hours.

52a, 52b, 52c AIRPLANE ENGINE REPAIR AND MAINTENANCE LABORATORY (5-5-5)

Required laboratory for Aeronautics 51a, 51b, 51c.

Dismantling and assembly of many types of engines, testing of engines on the test block and the repair of commercial engines, the installation of engines, and a complete service study of propellers, carburetors, engine instruments, ignition and all engine accessories. Laboratory and shop practice: 15 hours.

53a, 53b, 53c AIRCRAFT ENGINE MECHANICS (5-5-5)

Prerequisite: Employment in aviation industry.

Concurrent requirement: Aeronautics 54a, 54b, 54c.

Theory of reciprocating aircraft engines, ignition, electrical systems, propellers, lubrication and carburetion. A course leading to the FAA "E" license for students employed in the aviation industry. Class: 5 hours.
AERONAUTICS

54a, 54b, 54c  AIRCRAFT ENGINE REPAIR AND MAINTENANCE  (3-3-3)

Prerequisite: Employment in aviation industry.
Required laboratory for Aeronautics 53a, 53b, 53c.
Practical laboratory work dealing with the overhaul and repair of aircraft engines, propellers, carburetors and accessories. This course meets the practical engine experience required by a student to obtain his FAA mechanics license. Laboratory and shop practice: 10 hours.

55a, 55b  AIRCRAFT ENGINE THEORY  (3-3)

Prerequisite: Employment in aviation industry.
Theory of reciprocating aircraft engines, ignition, electrical systems, propellers, lubrication and carburetion. A brief course for students employed in the aviation industry who wish to qualify for the FAA "E" license. Class: 4 hours.

61a, 61b, 61c  THEORY OF AIRCRAFT REPAIR AND CONSTRUCTION  (5-5-5)

Concurrent requirement: Aeronautics 62a, 62b, 62c. Student must be carrying 14 units.
Fundamentals of all types of aircraft construction in use at the present time, materials used in aircraft construction, the necessary mathematics, together with a general study of processes of manufacture, repair, maintenance and operation. This course leads to FAA "A" license. Class: 5 hours.

62a, 62b, 62c  AIRPLANE CONSTRUCTION REPAIR AND MAINTENANCE LABORATORY  (5-5-5)

Required laboratory for Aeronautics 61a, 61b, 61c.
Airplane construction and repair, rigging, welding, assembly, sheet metal, woodwork, fabric, paint and dope, metal fittings and all types of repair and construction on airplanes which are being reconditioned for service. Particular emphasis is placed upon sheet metal aircraft fabrication. Laboratory and shop practice: 15 hours.

63a, 63b, 63c  AIRCRAFT CONSTRUCTION  (5-5-5)

Prerequisite: Employment in aviation industry.
Concurrent requirement: Aeronautics 64a, 64b, 64c.
Theory of rigging, welding, hydraulics, weight and balance and all fundamentals required for the FAA "A" license. Class: 5 hours.

64a, 64b, 64c  AIRCRAFT CONSTRUCTION LABORATORY  (3-3-3)

Prerequisite: Employment in aviation industry.
Required laboratory for Aeronautics 63a, 63b, 63c.
Practical aircraft construction work leading to the aircraft mechanics license. Laboratory and shop practice: 10 hours.
65a, 65b AIRCRAFT THEORY (3-3)
Prerequisite: Employment in aviation industry.
Theory of aircraft mechanics, rigging, welding, hydraulics, and weight and balance. A brief course for students employed in the aviation industry who wish to qualify for the FAA "A" license. Class: 4 hours.

71a AERONAUTICAL DRAFTING (1)
Fundamentals of drafting room practice, covering orthographic projection, sectioning, dimensioning, freehand drawing and simple layout of sheet metal parts. Class and laboratory practice: 3 hours.

73a, 73b, 73c JET PROPULSION LECTURE (5-5-5)
Prerequisites: "A" and "E" licenses, equivalent industrial experience or permission of instructor.
Concurrent requirement: Aeronautics 74a, 74b, 74c.
The theory of maintenance, repair, and overhaul of aircraft jet engines. Class: 5 hours.

74a, 74b, 74c JET PROPULSION SHOP (3-3-3)
Prerequisites: "A" and "E" licenses, equivalent industrial experience or permission of instructor. Required laboratory for Aeronautics 73a, 73b, 73c.
Shop practice in the maintenance, repair, and overhaul of aircraft jet engines. Laboratory and shop practice: 10 hours.

75a, 75b JET ENGINE THEORY (5-5)
Prerequisite: Employment in aviation industry.
A brief course in the theory of maintenance, repair, and overhaul of aircraft jet engines. Class: 3 hours; laboratory: 6 hours.

77a JET AND ROCKET ENGINE MECHANICS (2)
The theory, maintenance, overhaul and design of jet engines, including turbojets, turbofans, turboprop engines, ram and pulse jet engines. Class: 1 hour; laboratory: 2 hours.

77b JET AND ROCKET ENGINE MECHANICS (2)
Prerequisite: Aeronautics 77a.
Theory of rockets, jet propulsion, missiles including rocket theory, propellants, instrumentation, guidance systems and related subjects. Class: 1 hour; laboratory: 2 hours.

81a ELEMENTARY ELECTRICITY FOR AIRCRAFT (1)
Prerequisite: Employment in aviation industry.
The fundamental concepts of electricity, including how all matter is essentially electrical in nature, and how current flow is the movement of free electrons in direction of an applied voltage. Class: 1 hour.

82a FCC LICENSE PREPARATION (1)
Prerequisite: Employment in aviation industry.
Prepares students for the Federal Communications Commission examination for the Second Class License for commercial radio and telephone operators. Class: 1 hour.
83a, 83b GROUND SCHOOL FOR PILOT TRAINING (3-3)
Prerequisite: Aeronautics 83a is a prerequisite for Aeronautics 83b.
Basic study of civil air regulations, meteorology, navigation, theory of flight, general services of aircraft, and radio. This course is designed to meet the ground school requirements of the FAA private pilot certificate. Class: 3 hours.

ANATOMY

1 ELEMENTARY HUMAN ANATOMY (4)
Recommended preparation: High-school or college biology.
The structure of the human body and some physiological processes; special emphasis on anatomy. The course is planned for majors in physical education, home economics and nurses’ training. Class: 3 hours; laboratory: 3 hours.

ANTHROPOLOGY

1 PHYSICAL ANTHROPOLOGY (3)
An introduction to human development from earliest times. The origin, antiquity, and races of man, genetic determination, early migrations, and the emergence of racial groups in different environments. Class: 3 hours.

2 CULTURAL ANTHROPOLOGY (3)
Recommended preparation: Psychology or Sociology.
The nature of culture; culture growth and history; a survey of the range of cultural phenomena, including material culture, social organization, religion, language, and other topics. The course emphasizes the range of ways of living that different primitive societies have developed to achieve the goals of life. Class: 3 hours.

ART

1a ART HISTORY AND APPRECIATION (3)
An introduction to the history of Western architecture and sculpture from the earliest examples to those of the mid-twentieth century. The ideas and the forms used to express them are related to their historical context. Class: 3 hours.

1b ART HISTORY AND APPRECIATION (3)
No prerequisite.
A survey of the history of Western painting from Early Christian through contemporary trends with emphasis on the major artistic movement in European and American painting. Class: 3 hours.
1c READING IN ART HISTORY (1)
Prerequisite: Art 1a or Art 1b.
A seminar aimed at more intensive research into areas chosen by the student. May be taken concurrently with second semester’s work in 1a or 1b. Class: 1 hour.

2a BASIC DESIGN: GRAPHIC (2)
Basic relationships and expressive qualities of two-dimensional, black and white elements in organizing unified designs. Class: 1 hour; laboratory: 3 hours.

2b BASIC DESIGN: COLOR (2)
Prerequisite: Art 2a.
Color design in various media used in painting. Topics include problems and qualities of colors, color theory, color harmonies, color mixing and color psychology. Class: 1 hour; laboratory: 3 hours.

2c INTERMEDIATE DESIGN: THREE-DIMENSIONAL (1)
Prerequisite: Art 2a and 2b.
Three-dimensional design expressed in sculpture and architecture. The studio work consists of the application of design principles to a series of practical problems involving drawing, carving and modeling in various materials. Class: 1 hour; laboratory: 3 hours.

2d ADVANCED DESIGN (1)
Prerequisite: Art 2c.
A continuation of Art 2c in individual projects in three-dimensional design. Laboratory: 3 hours.

3a, 3b BASIC DRAWING (1-1)
An introductory course in freehand drawing and pictorial organization aimed at helping the student put ideas into graphic form. Includes perspective, light and shade, rendering and layout. Suggested for students entering the fields of education, display, interior design, architecture and landscape architecture. Laboratory: 3 hours.

4a, 4b BEGINNING PAINTING (2-2)
A studio class for the beginning student, conducted on a workshop basis. Painting with an emphasis on the oil technique. Lectures, demonstrations, and individual critiques. Art 4a is prerequisite to 4b. Class: 1 hour; laboratory: 5 hours.

4c, 4d ADVANCED PAINTING (2-2)
Prerequisite: Art 4a, 4b, plus one of the following may be taken concurrently: Art 1a, 1b, 2a, 3a.
A studio class for advanced painting students. Emphasis is on opaque media; oils and casein. Lecture periods, group discussions, criticism, demonstrations, and field trips. Class: 1 hour; laboratory 5 hours.

5a, 5b, 5c, 5d COMMERCIAL ART (1-1-1-1)
Practice in the use of graphic art forms for advertising media. Laboratory: 3 hours.
6a, 6b LETTERING AND POSTER DESIGN (1-1)
Lettering and its application to signs and display advertising; poster design as a medium of public relations and advertising. Laboratory: 3 hours.

11a, 11b, 11c, 11d WATERCOLOR PAINTING (1-1-1-1)
Prerequisites: Art 3a, 3b or permission of instructor.
Techniques for handling watercolor. Work is done from landscape and still life to give a variety of approach to the fundamental disciplines. Laboratory: 3 hours.

12a BASIC DESIGN: GRAPHIC (1)
Introduction to art elements, expressive qualities of two-dimensional black and white designs. Class stresses use of basic design principles, relationships and harmonies in creating unified designs. Class: 1 hour; laboratory: 2 hours.

12b BASIC DESIGN: COLOR (1)
Prerequisite: Art 12a or 2a.
Use of color in unifying the student's two-dimensional designs. Introduction to the qualities of color, color theory, color harmonies and simple color psychology. Class: 1 hour; laboratory: 2 hours.

14a, 14b, 14c, 14d BEGINNING AND ADVANCED PAINTING (1-1-1-1)
Prerequisite: Art 14a is prerequisite to 14b, 14b to 14c, 14c to 14d.
A studio class for the beginning painting student. A workshop and class with individual assignments as well as class assignments, demonstrations, lectures and critiques. Art 14b, 14c and 14d are continuations of Art 14a with increasingly advanced problems and individual instruction. Emphasis is on an enrichment of the student's experience with the oil medium. Class: 1 hour; laboratory: 2 hours.

15a CRAFTS (1)
An introduction to book-binding, paper sculpture, papier-mâché, and block printing. Suggested for students preparing to become elementary teachers. Laboratory: 3 hours.

15b CRAFTS (1)
A survey of crafts including clay modeling, mosaic, enameling on copper, puppet construction, and mask making. Suggested for students preparing to become elementary teachers. Laboratory: 3 hours.

15c, 15d TEXTILE CRAFTS (1-1)
A laboratory course emphasizing textile design and printing. Includes silk screen printing, stenciling, block printing and weaving. Especially recommended for elementary education majors. Laboratory: 3 hours.
17a BEGINNING CERAMICS (2)
An introduction to the materials, tools, and processes in the art of pottery making. The student learns to use the potter’s wheel, to mix glazes, and complete the entire ceramic process. Class: 1 hour; laboratory: 5 hours.

17b INTERMEDIATE CERAMICS (2)
Prerequisite: Art 17a.
A studio course dealing with all phases of the ceramic process. Projects are outlined to develop the student’s knowledge of wheel throwing, other methods of making ceramic forms, and design principles. Class: 1 hour; laboratory: 5 hours.

17c, 17d ADVANCED CERAMICS (2-2)
Prerequisite: Art 17a, 17b.
A more intensive course for the advanced student comprising projects that will enable the student to work in his own creative direction while gaining further mastery of the ceramic process. Class: 1 hour; laboratory: 5 hours.

21 ART IN DRESS (2)
A study of fashion and personal appearance, including choice of clothes and accessories based on principles of color and design as they relate to physical characteristics and personality. Survey of proper methods of personal care and grooming. Lecture and demonstration. Open to all women. Class: 2 hours.

22a, 22b, 22c, 22d HOME FURNISHINGS (1-1-1-1)
Planned for the student with little previous experience, this class includes work with lampshades, draperies, slip covers, and furniture upholstering. Students are permitted to choose projects according to their interests. Laboratory: 3 hours.

23 INTERIOR DECORATION (3)
Present-day room styling; selection of furniture, color schemes, floor, wall and window treatments. Planning and furnishing homes to fit individual needs. A lecture course open to all students. Class: 3 hours.

24a, 24b, 24c, 24d FIGURE DRAWING (1-1-1-1)
Prerequisite: Art 3a.
Figure drawing from the model with special instruction in correct observation, anatomy, structure and drapery. Laboratory: 3 hours.

51 ART IN MERCHANDISING (1)
This course is the same as Merchandising 51.
A course designed to introduce both art and business students to the fields of visual merchandising. Includes the principles of window and interior displays, retail advertising through newspaper and direct mail; use of color and design in products and packaging; display signs. Class: 1 hour; laboratory: 2 hours.
54a, 54b, 54c, 54d  PICTORIAL COMPOSITION (1-1-1-1)
Prerequisite: Art 4a, or permission of instructor.
A studio course in the various aspects of picture building. The student
is presented with an analysis of the various means of composition and
concepts of pictorial structure. Problems relating to these are given so
that the student may incorporate them in his own work. Also includes
work in experimental media, analysis of the masters, and a study of the
styles in twentieth century painting. Laboratory: 3 hours.

55a, 55b, 55c, 55d  STILL LIFE AND FIGURE PAINTING
(1-1-1-1)
Prerequisite: Art 4a, 4b, or permission of instructor.
A studio course for the more advanced student concentrating on the
various aspects and possibilities of the motif to aid the student in develop-
ing a stronger and more individual approach to painting. Work from
set-ups, model, and imagination. Laboratory: 3 hours.

56a, 56b, 56c, 56d  LANDSCAPE PAINTING (1-1-1-1)
Prerequisite: Art 4a, 4b, or permission of instructor.
A field class, using landscape forms as they relate to the problem of
painting. The student is encouraged to see in his own way and to find the
expressive possibilities in nature. Work done in various locales close to
the campus. Laboratory: 3 hours.

57a, 57b  CERAMIC DECORATION (2-2)
Prerequisite: Art 17d.
A studio course dealing with ceramic sculpture, tile decoration, and
decoration of ceramic ware. The student works with traditional methods
and experimental creative approaches to decoration. Class: 1 hour; labora-

tory: 5 hours.

58a, 58b  CERAMIC GLAZES AND BODIES (2-2)
Prerequisite: Art 17d.
An intensive study of glazes and clay bodies. Studio work stresses a
thorough knowledge of the technical aspects so that the student may
follow his unique approach to designing pottery forms. Class: 1 hour; labora-
tory: 5 hours.

59a, 59b, 59c, 59d  CERAMIC PROJECTS (2-2-2-2)
Prerequisite: Permission of instructor.
A studio course for advanced students willing to do work of a type that
will contribute to the reference material in the pottery laboratory. Projects
assigned by the instructor. Class: 1 hour; laboratory: 5 hours.

60a, 60b, 60c, 60d  FIGURE PAINTING (1-1-1-1)
Prerequisite: Art 4a, 4b, or permission of instructor.
A studio course in the construction, organization, and expression of the
human figure covering both portraiture and a more generalized approach
to the figure. Work is done primarily from the model; sketches, manne-
quins, and imagination are also used. Class: 1 hour; laboratory: 2 hours.
ASTRONOMY  BACTERIOLOGY  BIOLOGY

ASTRONOMY

1 GENERAL ASTRONOMY (3)
Recommended preparation: Plane geometry.
An introduction to the general facts and principles of astronomy.
Class: 3 hours.

BACTERIOLOGY

1 INTRODUCTORY BACTERIOLOGY (4)
Recommended preparation: Chemistry 1a or Chemistry 2A.
An introductory course for students majoring in bacteriology or related sciences. Includes the general morphology, taxonomy, and physiology of bacteria together with the study of bacteria of air, soil, water, foods, the role of bacteria in human, animal, and plant diseases, disinfectants, and immunity. (Changes from Bacteriology 1 to Bacteriology 2 are not permitted after the first six weeks.) Class: 2 hours; laboratory: 6 hours.

2 GENERAL BACTERIOLOGY (4)
Prerequisite: Chemistry 2A or high-school chemistry.
A special course for students who are not majoring in bacteriology.
Follows much of the material in Bacteriology 1, but with greater emphasis upon the human pathogens and immunology. (Changes from Bacteriology 2 to Bacteriology 1 are not permitted after the first six weeks.) Class: 2 hours; laboratory: 6 hours.

BIOLOGY

1a GENERAL BIOLOGY (4)
An introduction to the principles and interrelationships of the life sciences. Basic life processes common to all living things. A survey of the important groups in the plant and animal kingdom. Man's place in biology and nature. Emphasis is placed on physiological processes. Class: 3 hours; laboratory: 3 hours.

1b GENERAL BIOLOGY (4)
Prerequisite: One semester of biological science or permission of instructor.
Heredity; the life cycle of organisms; evolutionary development; ecological interrelationships of plants, animals, soils, climate and the total environment. Habitats and biotic communities. Economic biology. Conservation of natural resources. Class: 3 hours; laboratory: 3 hours. One week-end field trip required.

2 CONCEPTS IN BIOLOGY (3)
An introduction to living organisms: their structure, function, behavior, variability, inheritance, and evolution as related to the environmental complex and man. Class: 3 hours.
12 FIELD BIOLOGY (3)
Recommended preparation: High-school biology.
A field study of plants and animals in relation to their environment.
Stresses biological principles, natural history, field recognition and utilization of natural resources. Class: 2 hours; laboratory: 3 hours. One weekend field trip required.

BOTANY

1 GENERAL BOTANY (5)
An introduction to the structure, function, and heredity of higher plants. Class: 3 hours; laboratory: 6 hours.

2 THE PLANT KINGDOM (4)
Prerequisite: One semester of biological science or permission of instructor.
An introduction to the life history and morphology of representative members of major plant groups with emphasis on evolution. Class: 3 hours; laboratory: 3 hours.

3 FIELD BOTANY (4)
Prerequisite: One semester of a college biological science, or permission of instructor.
A taxonomic, hand-lens field study of California plants, with emphasis on the field identification of native California ferns, conifers, flowering plants and their families. Class: 2 hours; laboratory: 6 hours.

Business Education

ACCOUNTING

1a ELEMENTARY ACCOUNTING AND ACCOUNTING PRACTICE (4)
Prerequisites: Eligibility for English 1a, or one year of high-school bookkeeping with grade of B, or General Business 75 with grade of C.
Elementary accounting theory and practice, including a study of accounting procedures, systems, reports, forms, and records. Laboratory practice by use of problems and a practice set. Class: Lecture-laboratory: 6 hours.

1b ELEMENTARY ACCOUNTING AND ACCOUNTING PRACTICE (4)
Prerequisite: Accounting 1a with grade of C or better.
A continuation of the use of the theories and principles learned in Accounting 1a plus partnership procedures, corporation records and accounts, manufacturing and branch accounting, cost accounting, interpreting and analyzing financial statements and schedules. Laboratory practice by use of problems and a practice set. Class: 3 hours; laboratory: 3 hours.
2a INTERMEDIATE ACCOUNTING (3)
   Prerequisite: Accounting 1b with grade of C.
   Intensive review of financial statements, the accounting process, receivables, inventories, liabilities, and investments. Includes problems from C.P.A. examinations. Class: 3 hours.

2b INTERMEDIATE ACCOUNTING (3)
   Prerequisite: Accounting 2a with grade of C.
   Intensive review of plant and equipment, corporate capital, intangibles, long-term debt, and analytical processes in accounting. Includes problems from C.P.A. examinations. Class: 3 hours.

3 COST ACCOUNTING (3)
   Prerequisite: Accounting 1b with grade of C.
   Fundamentals of cost accounting including job order, process costs, and standard costs. Class: 3 hours.

9 INTERMEDIATE ACCOUNTING (3)
   (Formerly Accounting 2)
   Prerequisites: Accounting 1a and 1b.
   A review and augmentation of topics covered in Elementary Accounting: balance sheet, income and retained earnings statements, the accounting process, cash and temporary investments, receivables, inventories, liabilities, investments, plant and equipment, intangibles, long-term debts, corporate paid-in capital and retained earnings statement analysis and application of funds. Class: 3 hours.

71 INCOME TAX PROCEDURE
   A non-technical presentation of information needed in preparing income tax returns for individuals. Tax regulations are studied and the students are taught to prepare returns and to become familiar with all forms ordinarily used in connection with income tax. Class: 2 hours.

72 PAYROLL RECORDS AND PROCEDURES (2)
   A study of the principal federal and state laws that affect payroll, a study of the basic payroll records, and practice in preparing the records and the required government reports from the records. Class: 2 hours.

83 SURVEY OF BUSINESS DATA PROCESSING (3)
   Introduction to the field of data processing through a survey of the literature dealing with the topic, field trips to installations, and practical application of data-processing principles by means of a class project. Class: 3 hours.

BUSINESS ADMINISTRATION

18a BUSINESS LAW (3)
   The legal environment of business including the history, philosophy, and sources of law; legal institutions, courts and procedure; general law of contracts; sales contracts and negotiable instruments. Class: 3 hours.
18b BUSINESS LAW (3)
Prerequisite: Business Administration 18a.
Law of agency and employment, partnerships, corporations and business trusts; personal property and bailments; real property and security devices; insolvency and bankruptcy; insurance. Class: 3 hours.

40 BUSINESS ORGANIZATION AND MANAGEMENT (3)
A study of management principles and their application to planning, organizing, staffing, directing, and controlling an organization. Class: 3 hours.

41 OFFICE ORGANIZATION AND MANAGEMENT (3)
Analysis of functions of various office departments, their organization and management. Methods used in office planning, layout and flow of work; systems and routines; selection and care of office supplies and equipment; selection and training of office personnel; methods and devices used to improve operating efficiency; types and uses of office appliances; techniques for performing office duties. Case studies included. Class: 3 hours.

42 ELEMENTS OF PERSONNEL MANAGEMENT (3)
Principles of and methods for the effective utilization of the human resources in organizations, including the procurement, placement and evaluation of personnel; development programs, remuneration and security, and management-labor relations. Class: 3 hours.

43 SYSTEMS AND PROCEDURES (3)
Designed for supervisory personnel in business, industry, and government, the course is a study of methods for translating management policy into action by the development of effective systems and procedures. Class: 3 hours.

61 LABOR RELATIONS (2)
An introductory course designed to develop an understanding of the employer-employee relationship; the approaches which are taken to develop harmonious relations; and the laws, regulations, and court decisions which govern labor relations. Class: 2 hours.

85 PRINCIPLES OF MARKETING (3)
A study of those business activities involved in the flow of goods and services from producer to consumer and the principles which have been developed in performing such functions as buying, selling, transportation, storing, packing, standardization, grading, financing, recording, market risks, market research, and market management. Class: 3 hours.

87 BUSINESS ECONOMICS (3)
An introductory study of the activities of American industries with emphasis on products made; technology employed in production; economic factors of supply and demand, pricing, costs, and competition; growth and development; and the impact of industrial decisions on the U.S. economy. Class: 3 hours.
BUSINESS ENGLISH

53a FUNDAMENTALS OF ENGLISH FOR BUSINESS (3)
A study of grammar, punctuation, vocabulary, syllabication, and sentence structure for students who will be expected to write accurately for business or industry. Class: 3 hours.

53b CORRESPONDENCE FOR BUSINESS (3)
Prerequisite: English 53a or 1a.
A course in the basic principles of clear and effective business letters; study and practice in gaining clarity, correctness, and logical organization in the common types of communications, including routine letters, inquiries, adjustments, applications; sales, credit, and collection letters. Helpful to businessmen and secretaries. Class: 3 hours.

56 REPORT WRITING FOR BUSINESS (3)
Prerequisite: English 53a or 1a.
Designed for businessmen, public administrators, and engineers, the course includes a study of the methods for collecting, organizing, and interpreting data, and emphasizes the skills necessary for writing effective business reports. Class: 3 hours.

GENERAL BUSINESS

15 FILING AND RECORDS MANAGEMENT (2)
Basic principles, procedures and systems of filing including the management aspects of establishing filing systems, selecting equipment and supplies, maintaining and controlling filing systems, transferring and disposing of inactive records, evaluating filing efficiency. Class: 2 hours.

55 INTRODUCTION TO BUSINESS (3)
A survey of the economic environment in which business operates and the functions which comprise the business unit. Class: 3 hours.

60 LEGAL ASPECTS OF EMPLOYMENT SECURITY (3)
Prerequisite: Employment in the employment security field with government, management or labor.
The fundamentals of social insurance with emphasis on the unemployment insurance program in California. Comparisons between insurance principles and welfare programs; examination of Federal legislation, and Federal influences on state programs; financing and experience rating, and examination of the various areas of eligibility and disqualifications; concepts of disability insurance and its relationship to other programs. Class: 3 hours.
62 SPELLING (2)
A study of Latin and Greek roots of common words as an aid to understanding their formation, meanings, and spelling. The second half of the course is devoted to a study of the spelling and meaning of words commonly used in business. Class: 2 hours.

63 PERSONAL FINANCE (2)
Everyday economic problems of the consumer including budgeting, borrowing, charge accounts, installment buying, insurance, savings, investments, pensions, social security, home ownership, banking functions, tax payments, trust funds, wills and estates. Class: 2 hours.

64 HUMAN RELATIONS IN BUSINESS (1)
Designed to help the student make a scientific appraisal of career opportunities in business and industry. Teaches how to compete effectively with others for career positions. Analysis of a number of simple case studies in the field of human relations to give the student a sound foundation for winning promotions and getting along with people. Class: 1 hour.

65 INTRODUCTION TO INVESTMENTS (3)
Principles of stock market investments, types of investment programs to meet needs of various classes of investors. Emphasis on determining which stocks are the best investments and when to buy them. Class: 3 hours.

67 MACHINE CALCULATION (1)
Prerequisite: Satisfactory achievement on arithmetic placement test.
A survey of the various types of calculating and adding machines, including the rotary calculator, the key-driven calculator, ten-key adding listing machine, and the full-keyboard adding listing machine. The application of business arithmetic to the operation of calculating machines. Class: 1 hour; laboratory: 2 hours.

68 PRINCIPLES OF INSURANCE (3)
A survey of general insurance principles including background, ethics, and the areas of life, accident and health, fire and casualty, liability, unemployment, and social security insurance. Emphasis placed upon the types of insurance the individual is most likely to need in adult life and business. Class: 3 hours.

75 BEGINNING BOOKKEEPING (3)
A study of double-entry bookkeeping including debits and credits, journalizing, posting, accounts, ledgers, cash journals, banking procedures, petty cash, notes, payroll records, work sheet, balance sheet, profit and loss statement. Procedures applicable to single proprietor business are studied. Emphasis upon keeping accurate and neat records. Class: 3 hours.
77 ADVANCED MACHINE CALCULATION (1)
Prerequisite: General Business 67.
Specialization on one of the following machines: rotary calculator, key-driven calculator, or a combination of the full-keyboard adding listing machine, and the ten-key adding listing machine. Attention is given to advanced business mathematics including interest, square root, percentage ratios, and pro-rate problems. Class: 1 hour; laboratory: 2 hours.

78 BUSINESS MATHEMATICS (3)
Prerequisite: Satisfactory achievement on arithmetic placement test.
A brief review of addition, subtraction, multiplication, division, percentage, and their general applications.
Satisfactory completion of the course will simplify the student's work in business mathematics, bookkeeping, machine calculation, banking, selling, personal finance, and other situations where computations are involved. Practical application of fundamental processes is stressed with the idea of making them functional whenever they are needed in home, business, or industry. Class: 3 hours.

81 READINGS IN DATA PROCESSING (2)
A directed reading course to acquaint students with the history, present status, and current developments of business data processing. Readings will include books, periodicals, and other publications dealing with data processing. Class: 2 hours.

82 DATA SOURCES, RECORDING AND TRANSMISSION (3)
A study of the laws, production processes, inventory procedures, payroll procedures, and cost control devices which make the collection of data necessary and/or produce data which must be processed. Included is a survey of the media and methods used in transmitting data to the machine accounting department. Class: 3 hours.

MERCHANDISING

26 SALESMASTERSHIP AND DISTRIBUTION (3)
An analysis of the distributive functions in today's economy with primary emphasis placed upon the fundamentals of salesmanship as put into practice in selling ideas, services, and merchandise. Emphasis on sales psychology and personality development of the student. Class: 3 hours.

50 ADVERTISING (3)
Recommended preparation: A basic course in retail merchandising or salesmanship.
A comparative analysis of the basic advertising media. Attention is given to the operating side of advertising, copy, and the economic and social aspects of advertising with emphasis on the importance of local retail advertising in the average-size community. Class: 3 hours.
51 ART IN MERCHANDISING (1)
A course designed to introduce both art and business students to the fields of visual merchandising. Includes the principles of window and interior displays, retail advertising through newspaper and direct mail; use of color and design in products and packaging; display signs. Class: 1 hour; laboratory: 2 hours.

56 PRINCIPLES OF RETAILING (3)
A study of the principles and practices used in the operation of a profitable small retail store or small business. Community analysis, site selection, store layout, buying functions, inventory control, mark-up, displays, promotion, credit, selling, marketing, and cost analysis. Each student is required to draw up a complete plan for the establishment and operation of a small business. Class: 3 hours.

58a MERCHANDISING (4)
Designed to prepare career-minded men and women for responsible junior executive positions in the selling and merchandising fields. The following areas are covered: store system, store organization, merchandising mathematics, and stock control (including mark-up and markdown procedures). Special emphasis is placed upon the promotional aspects of merchandising, including interior and window display, development of special "promotionals," layout, and point of purchase display. A four-week unit on salesmanship is included. Field trips and guest speakers supplement the regular class work. Class: 5 hours; laboratory: 1 hour.

58b MERCHANDISING (4)
Designed to prepare career-minded men and women for responsible junior executive positions in the selling and merchandising fields. The following areas are covered: credit, merchandise control, and fashion merchandising. Special emphasis is placed upon the buying function. Problems involving the use of advertising media are analyzed. A four-week unit on salesmanship is included. Field trips and guest speakers supplement the regular class work. Class: 5 hours; laboratory: 1 hour.

59a FASHION MERCHANDISING (2)

59b HARD-LINE MERCHANDISING (1)
A comparative analysis of shoes and leather goods, costume and precious jewelry, silver, china, glassware, furniture, plastics, cosmetics, appliances, automotive goods and miscellaneous merchandise. Discussion of the techniques involved in the merchandising of each item. Emphasis is placed upon the selling advantages of each item. Class: 1 hour.
BUSINESS

76 MERCHANDISE MANAGEMENT (1)
Designed to train store managers. Covers such topics as: types of customers who shop at shopping centers, level of retail sales training, store security, display program, basic stock program, major sales promotion, dealing with resource, salesmen and personnel and supervision of staff. Class: 2½ hours per week for 10 weeks.

101a, 101b, 101c, 101d SUPERVISED WORK EXPERIENCE IN RETAILING AND MERCHANDISING (2-2-2-2)
Concurrent requirement: Enrollment in one of the following: Merchandising 26, 56, 58a, 58b, 59a, 59b; General Business 64.
A laboratory for sales experience in cooperation with employers. Students are employed in a retail business under the supervision of the instructor and the employer. A minimum of 15 hours employment per week at regular pay is required. Supervised work experience during holidays and vacation periods may be used in meeting the minimum requirements.

REAL ESTATE

19 LEGAL ASPECTS OF REAL ESTATE (3)
Prerequisite: Real Estate 88a, a real estate license, or equivalent related experience or permission of the instructor.
A study of California real estate law with emphasis on its application in real estate brokerage and related fields. This course is useful in assisting those practicing real estate as well as those preparing for license examination. Class: 3 hours.

51 TRENDS AND FACTORS INFLUENCING REAL ESTATE (3)
Prerequisite: Real Estate 88a, real estate license, or equivalent related experience or permission of the instructor.
An intensive study of the factors which influence changes in real estate values as an aid to brokers and salesmen in discovering and evaluating causes influencing the changes. Patterns of land usage are of major concern. Class: 3 hours.

52 PRINCIPLES OF REAL ESTATE APPRAISAL (RESIDENTIAL) (3)
Prerequisite: Real Estate 88a, real estate license, or equivalent related experience or permission of the instructor.
A first course in real estate appraisal confined largely to residential property, with an introduction to income property valuation. Case studies and actual work in appraising are involved. Class: 3 hours.
53 ESCROW PROCEDURES (3)
Prerequisite: Real Estate 88a, a real estate license, or equivalent related experience as determined by the coordinator or instructor.
Processing of sale, loan, and business opportunity escrows. The student gains familiarity with the drawing of documents, prorating, title reports, and the requirements of efficient escrow processing. Class: 3 hours.

88a INTRODUCTION TO PRINCIPLES OF REAL ESTATE (3)
A one-semester course covering the economics of land ownership and use. A study of the legal principles and rules pertaining to real estate property. Particular attention is paid to California real estate law, which will assist those preparing for the salesman and broker examination. Class: 3 hours.

88b REAL ESTATE PRACTICES (3)
Prerequisite: Real Estate 88a, a real estate license, or permission of instructor.
The activities of the broker and salesman in the real estate business; the real estate office, listings, valuation of listings, prospecting, advertising, exchanges, property management and leasing, land utilization and development, public relations, handling sales force, and ethics of the real estate business. Class: 3 hours.

89 REAL ESTATE FINANCE (3)
Prerequisite: Real Estate 88a, a real estate license, or equivalent related business experience as determined by the coordinator.
Practical study of the financing of real estate—economics of the accumulation of savings into funds made available for investment in real estate loans, techniques of trust deed financing, legal problems, and appraising. Class: 3 hours.

SECRETARIAL SCIENCE

3a BEGINNING TYPEWRITING (2)
Stresses keyboard mastery and fundamentals of good typing technique necessary for maximum skill in copy work. Problems include centering, business letters, simple tabulation, and manuscript. Class: Lecture-laboratory: 5 hours.

3b INTERMEDIATE TYPEWRITING (2)
Prerequisite: Secretarial Science 3a or one year of high-school typing with a minimum copy speed of 30 words per minute.
Aims to improve typing skill in copy work and problems involving business letters, rough draft, and tabulation. Class: Lecture-laboratory: 5 hours.
4a ELEMENTARY SHORTHAND (5)
Prerequisite: Secretarial Science 3a or its equivalent. (May be taken concurrently.)
The basic principles of Gregg Shorthand Simplified. Emphasis is placed upon mastery of shorthand characters, brief forms, phrases, dictation, and transcription. The achievement of a dictation rate of 60 to 80 words per minute is expected. Class: Lecture-laboratory: 5 hours.

4b INTERMEDIATE SHORTHAND (5)
Prerequisites: Secretarial Science 3a and Secretarial Science 3a or their equivalents.
A continuation of the course in Gregg Shorthand Simplified reviewing all principles set forth in Volume One. It increases reading and writing ability, develops business vocabulary, and works toward an employable skill in transcription. A dictation rate on practiced material of 100 to 120 words per minute is expected. Class: Lecture-laboratory: 5 hours.

5 SECRETARIAL PROCEDURES (2)
Prerequisite: Secretarial Science 3b and 4b (or the equivalent) with a grade of B and competency in filing and spelling; or approval of the instructor.
Information covering the use of those machines which a secretary may be called upon to operate in the performance of her secretarial duties. These machines include the stencil process duplicators, the fluid duplicators, the mimeoscope, the Verifax, and the Thermofax. Class: 3 hours.

51a, 51b ELEMENTARY SHORTHAND (3-3)
Prerequisite: Secretarial Science 3a. (May be taken concurrently.)
The basic principles of Gregg Shorthand Simplified. Emphasis is placed upon mastery of shorthand characters, brief forms, phrases, dictation, and transcription. Achievement of a dictation rate of 60 words per minute is expected. Approximately equivalent to Secretarial Science 4a. Class: 3 hours.

51c, 51d INTERMEDIATE SHORTHAND (3-3)
Prerequisite: Secretarial Science 51a, 51b, and Secretarial Science 3a, 3b, or equivalents.
Practice in integrating previously acquired shorthand skills. Short cuts and construction of outlines for new words. Emphasis is placed on rapid, accurate dictation, and transcription. A dictation rate of 120 words may be attained. Approximately equivalent to Secretarial Science 4b. Class: 3 hours.

52a ADVANCED SHORTHAND (4)
Prerequisites: Secretarial Science 4a, 4b and Secretarial Science 3a, 3b, or their equivalents.
Practice in integrating previously acquired shorthand skills. Short cuts and construction of outlines for new words. Emphasis is placed on rapid, accurate dictation and transcription. The ability to prepare mailable transcripts with job competency in secretarial work is the goal. A dictation speed of 120 to 140 words per minute is attained. Recommended for students planning a secretarial career. Class: 4 hours.
52b SPECIALIZED DICTATION (3)
Prerequisite: Secretarial Science 52a.
Designed to develop advanced shorthand and transcription skills, office-style dictation, and work vocabularies in the most common fields in which secretaries find employment. Emphasis is placed upon rapid, accurate dictation and mailable transcripts with superior production standards. Class: 3 hours.

53c ADVANCED TYPEWRITING (1)
Prerequisite: Secretarial Science 3b or two years of high-school typing with a minimum copy speed of 40 words per minute.
Development of speed and accuracy in statistical and straight copy work, business letters, tabulation, centering, and rough draft. Class: 1 hour; laboratory: 2 hours.

53d ADVANCED TYPEWRITING (1)
Prerequisites: Secretarial Science 53c, or three years of high-school typing with a minimum copy speed of 50 words per minute.
An intensive course using skill building procedures to bring the student's typing speed up to job competence level. Class: 1 hour; laboratory: 2 hours.

55 MEDICAL SECRETARY (3)
(Formerly Medical Receptionist. See Medical Secretary heading.)

73a BEGINNING TYPEWRITING (Part 1) (1)
Develops keyboard mastery and correct stroking technique leading to maximum skill in typing. Simple problem work includes centering, typing notices, announcements, and personal notes. Laboratory: 3 hours.

73b BEGINNING TYPEWRITING (Part 2) (1)
Prerequisite: Secretarial Science 73a.
Instruction and practice in typing personal and business letters, rough drafts and simple manuscripts, and simple tabulated reports. Various styles of letters and methods of developing speed and control. 73a and 73b together are approximately equivalent to 5a. Laboratory: 3 hours.

73c INTERMEDIATE TYPEWRITING (1)
Prerequisite: Secretarial Science 3a, or 73a and 73b, or a speed of 45 words per minute.
Aims to improve typing skill in copy work and problems involving typing business letters, rough draft, and tabulation. Class: 3 hours.

102a, 102b COOPERATIVE OFFICE TRAINING (1-1)
Prerequisites: Enrollment in Secretarial Science 103a, 103b, and approval of instructor.
This course deals primarily with on-the-job problems of the students occupying supervised work experience positions in the secretarial, bookkeeping, clerical and general business fields. The course includes a study of employer-employee relationships, applying for a position, wage systems, retirement plans, social security, and unemployment insurance. The in-service improvement and other areas are designed to prepare students for successful careers in their chosen occupations. Class: 1 hour.
CHEMISTRY

103a, 103b  SUPERVISED WORK EXPERIENCE IN OFFICE TRAINING (2-2)
Concurrent requirement: Enrollment in Secretarial Science 102a, 102b.
Each student is required to occupy a work experience position in the secretarial, bookkeeping, or general clerical field. The instructor helps the student obtain a position, and the student receives the regular prevailing wage while taking the work experience training. The student's grade for supervised work experience is determined by the instructor and the employer. A minimum of fifteen hours of employment per week is required.

STATISTICS

1  ELEMENTARY STATISTICS (3)
Prerequisites: One year of high-school algebra or Mathematics 91 with a grade of B or better.
This course is intended for majors in the natural and social sciences using statistics as a tool. Topics covered are measures of central tendency, variation, regression, correlation, index numbers, and time series analysis. Probability, sampling, sampling distributions, estimation, and tests of statistical hypotheses. Standard methods and their validity illustrated by sampling experiments. Class: 3 hours.

CHEMISTRY

1a  GENERAL CHEMISTRY (5)
Prerequisite: High-school chemistry with a recommended grade or Chemistry 2A with a grade of C or higher and Mathematics 53a. Mathematics 53a may be taken concurrently.
A study of the principles of chemistry with accompanying laboratory work, which consists of experiments illustrating the principles studied in the classroom. Class: 3 hours; laboratory: 6 hours.

1b  GENERAL CHEMISTRY (5)
Prerequisite: Chemistry 1a.
In this course the lecture material includes the study of the more important elements, and also some of the theories and principles of chemistry. The laboratory work consists of qualitative analysis. Class: 3 hours; laboratory: 6 hours.

2A  INTRODUCTORY CHEMISTRY (5)
Recommended prerequisite: Elementary algebra. (High-school chemistry not necessary.)
The principles of chemistry and some of the common elements are studied. During the latter part of the semester, emphasis is placed upon organic chemistry. Class: 3 hours; laboratory: 4 hours.
5 QUANTITATIVE ANALYSIS (4)
(Formerly Chemistry 6a)
Prerequisite: Chemistry 1a, 1b with a grade of C or better.
An introduction to the methods of gravimetric and volumetric analysis.
Class: 2 hours; laboratory: 6 hours.
6b QUANTITATIVE ANALYSIS (4)
Prerequisite: Chemistry 6a.
Advanced gravimetric and volumetric analysis. Special attention is given to instrumental methods and to the theories of the subject. Class: 2 hours; laboratory: 6 hours.
8 LECTURES IN ORGANIC CHEMISTRY (3)
Prerequisite: Chemistry 1a with a grade of C or better or Chemistry 2A with approval of instructor.
An introduction to the study of carbon compounds, including both aliphatic and aromatic hydrocarbons and their derivatives. Class: 3 hours.
9 ORGANIC LABORATORY (3)
Prerequisites: Chemistry 1a and Chemistry 8.
The techniques of organic chemistry, the preparation of organic compounds and the study of their properties. The last half of the semester will be devoted to an introduction to qualitative organic analysis. Class: 1 hour; laboratory: 6 hours.
12 ORGANIC CHEMISTRY (5)
Prerequisite: Chemistry 1a, 1b with a grade of C or better.
The study of carbon compounds, including both aliphatic and aromatic hydrocarbons and their derivatives. Class: 3 hours; laboratory: 6 hours.

DENTAL ASSISTING

52 INTRODUCTION TO DENTAL ASSISTING (4)
Recommended preparation: High-school courses in biology and physiology.
An exploratory course to acquaint the student with the one-year Dental Assisting curriculum and the qualifications necessary for success in the Dental Assisting field. This class further prepares the student for subsequent courses by an introduction to elementary head and dental anatomy, dental vocabulary, oral pathology, and dental medicines. Class: 4 hours.
53a, 53b CHAIRSIDE PROCEDURES (5-5)
Recommended preparation: High-school courses in science and mathematics.
This course is designed to give the student basic knowledge and practical experience in all of the general dental office procedures including the seating and dismissing of patients, charting teeth and cavities, identifying and sterilizing instruments, mixing filling materials, preparing impression materials for use and processing the impressions. Familiarization with and knowledge of set-ups for all general operating room procedures as well as minor surgery and first aid. Improvement of manipulative skills is stressed and individualized instruction is given. Class: 3 hours; laboratory: 6 hours.
54a, 54b DENTAL RADIOGRAPHY PROCEDURES (2-2)
A course in dental X-ray including basic principles, practical experience in operating X-ray machines, care and maintenance of X-ray machines, care and storage of supplies, exposure techniques, mounting and filing of radiographs. Individual assistance is given to each student in overcoming problems of technique. Emphasis on safe procedures for both the operator and the patient. Class: 1 hour; laboratory: 3 hours.

55a, 55b DENTAL LABORATORY PROCEDURE (2-2)
Recommended preparation: High-school courses in mathematics and the physical sciences.
This course provides laboratory experience in pouring models and making base plates, the use of impression materials, acrylics, and dental waxes; techniques used in investing and casting, safety, maintenance of equipment and supply control are also covered. Class: 1 hour; laboratory: 3 hours.

56 GENERAL DENTAL OFFICE AND PATIENT ROUTINE (3)
Recommended preparation: High-school courses in business are desirable.
A study of the fundamental problems and practices in operating a dental office including ethics, patient relationships, office teamwork, telephone technique, care and use of dental office equipment, patient education, records, appointment control, office maintenance and safety precautions. Class: 3 hours.

57 DENTAL OFFICE BOOKKEEPING (3)
Recommended preparation: High-school courses in business and mathematics are desirable.
A course designed to create an awareness of, and give practice in keeping accurate and neat records. A study of patient record cards, appointment books, record filing, banking, and other office procedures including collections and making financial arrangements for payment. Class: 3 hours.

58 IN-SERVICE OFFICE TRAINING (3)
Practical experience in dental office routine in a selected practice office. The student will assist the in-service office staff with routine duties, including: receiving and dismissing patients; maintaining routine patient charts; chairside procedures; taking and developing X-rays; use, care, and sterilization of instruments; for a minimum of six hours a week. Laboratory: 8 hours.

59 ADVANCED DENTAL ASSISTING PROBLEMS (2)
A course designed to evaluate the student's abilities, problems and techniques. The evaluations are made by the in-service office doctor, department instructors, and a self-evaluation by the student. Student needs will be determined and the class and individual instruction will be adapted to meet the situation. Class: 3 hours.
70 ADVANCED DENTAL RADIOGRAPHY PROCEDURES (2)
Prerequisite: One year of X-ray experience or permission of instructor.
A concentrated problem-solving advanced X-ray course designed for the dental assistant. Practice in improvement of techniques is stressed and specific attention given to individual problems. Class: 3 hours.

71a, 71b CERTIFICATION STUDY COURSE (1-1)
Prerequisite: One year of experience as a dental assistant or approval of the Tri-County Dental Advisory Committee.
This course is designed for the dental assistant who needs to fulfill the qualifying educational requirements before taking the American Dental Assistants Association Certification Examination. Class: 3 hours.

DRAFTING


1a MECHANICAL DRAFTING (2)
Recommended preparation: Plane geometry (may be taken concurrently.)
An introductory course covering the use and care of instruments, lettering, geometric constructions, orthographic projections, sectioning, dimensioning, and freehand drawing. Class: 1 hour; laboratory: 5 hours.

1b MECHANICAL DRAFTING (2)
Prerequisites: Drafting 1a or one year of high-school drafting.
The application of mechanical drawing to the solution of practical problems. Applications of auxiliary and double auxiliary projection; pictorial drawing in isometric, oblique and perspective; developments and inter-sections of surfaces; and the detailing of cast, forged, and machined parts. Class: 1 hour; laboratory: 5 hours.

3a ARCHITECTURAL DRAFTING (2)
Prerequisite: Drafting 1a or one year of high-school drafting.
Drafting techniques in the making of working drawings for building construction, with special emphasis on house planning, house construction, and the building code. The drawing of a complete set of plans, elevations, and details of a private dwelling. Class: 1 hour; laboratory: 5 hours.

3b ARCHITECTURAL DRAFTING (2)
Prerequisite: Drafting 1a, or one year of high-school mechanical drawing and permission of the instructor.
Emphasis on display techniques in architectural drawing. Includes model construction, perspective, and shades and shadows. Class: 1 hour; laboratory: 5 hours.
3c ARCHITECTURAL DRAFTING (2)
Prerequisite: Drafting 3a.
Specifications and detailing practices in various building materials. Computation of engineering loads on footings, columns, beams, and trusses. Computation of heat loss on structures and design specification of the heating systems. Electrical specifications and planning for proper illumination. Class: 1 hour; laboratory: 5 hours.

51a, 51b ADVANCED MECHANICAL DRAFTING (2-2)
Prerequisites: Drafting 1a and 1b, or two years of high-school mechanical drawing and plane geometry.
An exploratory course in the application of drawing to the various industrial fields. Problems of piping and welding drawing; mapping and topographic drawing; structural and architectural drawing; schematic drawing as applied to the electrical field. Machine drawing, including the theory and practice of dimensioning, sectioning, and detailing of fastenings, cams and gears. Drawing of detailed and assembled parts of machines. The course is designed primarily for students going into drafting as an occupation. Class: 1 hour; laboratory: 5 hours.

52 ILLUSTRATION DRAFTING (2)
Prerequisites: Drafting 1a and 1b or two years of high-school drafting and plane geometry.
A study of various types of pictorial projection; axonometric, oblique, one, two, and three point perspective. Applications of shades and shadows to orthographic, axonometric and perspective drawing. This course is designed primarily for students going into drafting as an occupation. Class: 1 hour; laboratory: 5 hours.

54a BLUEPRINT READING (BUILDING TRADES) (1)
A study of the various symbols, techniques and conventional practices used in blueprints for the building trades. This course is primarily designed for students who have a need for the reading of prints rather than the actual techniques of drawing. Includes study of orthographic projection and the production of freehand pencil sketches. Class: 1 hour; laboratory: 1 hour.

54b BLUEPRINT READING (MACHINE TRADES) (1)
A study of the various symbols, techniques, and conventional practices used in blueprints for machine trades. The course is primarily designed for students who have a need for the reading of prints rather than the actual techniques of drawing. Includes study of orthographic projection and the production of freehand pencil sketches. Class: 1 hour; laboratory: 1 hour.

54c BLUEPRINT READING (INDUSTRIAL TRADES)
(1/2)
A study of the various symbols, techniques and conventional practices used in blueprints. Designed for employees of the steel industry who have a need for the reading of prints or the ability to make quick, accurate freehand sketches. Class: 2 hours; laboratory: 1 hour.

112
55a Engineering Layout Drafting (2)
Prerequisite: One year of high-school mechanical drawing, or Drafting 1a, or acceptable experience.
Layout and drawing of detail and assembly drawings with specifications, notes, tolerances, finishes, bill of material, and drawing techniques as used in industry. Class: 1 hour; laboratory: 5 hours.

56 Introduction To Electronic Drafting (3)
Prerequisites: One year of high-school drafting or Drafting 1a and Electronics 50. Electronics 50 may be taken concurrently.
The application of drawing to the electronics field. Layout of electronic circuits, electrical and block diagrams and the use of standard symbols in schematic drawing. Class: 2 hours; laboratory: 4 hours.

58 Drafting Techniques In Electronic Packaging (2)
Prerequisite: Drafting 56 or equivalent in electronic experience and mechanical drafting.
Problems in the conversion of a circuit design to a physical entity to obtain optimum part placement and performance, including circuit board layouts, art work for printed circuits, 3-D packaging with welded circuitry and stacked assemblies, and connection and cabling diagrams. Class: 1 hour; laboratory: 5 hours.

Drama

1 Acting (3)
A study of the theory of acting, pantomime, voice, dramatic movement, and fundamentals of characterization. Class: 3 hours.

2 Acting (3)
Prerequisite: Drama 1.
A study of acting techniques necessary for drama of various types, including stylized, period, and dialect. Class: 3 hours.

3, 4 Acting (2-2)
Prerequisite: Drama 1, 2.
This course is designed for advanced students who are interested in pursuing more difficult projects in drama analysis, play directing, and acting techniques. Class: 2 hours.

5, 6 Introduction To Stagecraft And Scene Design (2-2)
A study of stagecraft, design, stage lighting, costume, and properties with practical application in college productions. Class: 1 hour; laboratory: 2 hours.
ECONOMICS

8a, 8b, 8c, 8d  LITTLE THEATRE (2-2-2-2)

This course is designed to afford interested community adults, as well as regular college students, an opportunity to participate in the college drama program. The class will include all-aspects of theater production, such as the fundamentals of play production, stage management, costume, publicity, settings, properties, make-up, and acting. Application of these fundamentals will culminate in one-act plays and major productions presented as a part of the college drama department's program for the public. Laboratory: 3 hours.

50a, 50b, 50c, 50d  DRAMA LABORATORY (1-1-1-1)

Practical theater experience for students not enrolled in a regular drama class. Requires a minimum of 48 hours per semester in either acting or production roles.

ECONOMICS

1a, 1b  PRINCIPLES OF ECONOMICS (3-3)

Prerequisite: Eligibility for English 1a.

A general survey of the discipline of economics, including the market mechanism, the allocation of resources, economics of the individual firm, government finance, international trade and economic growth. Class: 3 hours.

10  DEVELOPMENT OF THE CONTEMPORARY ECONOMY (3)

Prerequisite: Eligibility for English 1a.

The historical development of the institutions and ideas related to our present economic system emphasizing the contributions of the Scholastics, Mercantilists, Adam Smith, Ricardo, Marx, and Keynes. The course culminates in a review of modern economic problems. Designed to promote understanding of our economic system as compared with others. Class: 3 hours.

57  THE AMERICAN ECONOMY (3)

An introduction to economics with emphasis on the contemporary American economy. This course is designed for students with a business major and for those with occupational and technical majors. Promotes understanding of the kind of day to day personal and national economic problems faced by all citizens. Class: 3 hours.

114
EDUCATION   ELECTRICITY   ELECTRONICS

EDUCATION

10 INTRODUCTION TO EDUCATION (3)
   Prerequisite: Eligibility for English 1a and Sophomore standing or University eligible.
   An introductory survey of public education in the United States designed to acquaint prospective teachers with current thinking on such educational problems as objectives and methods of teaching, organization and finance, curriculum and personnel, and the understanding of pupils. Vocational opportunities in the public schools and credential requirements. Classroom and board meeting visitations supplement class work. This course does not meet any of the requirements for a teaching credential, but will provide orientation in the field of education. Class: 3 hours.

ELECTRICITY

51a, 51b BASIC INDUSTRIAL ELECTRICITY (3-3)
   Prerequisite: Electricity 51a is a prerequisite to 51b.
   A basic course in industrial electricity including the theory of and practical instruction in DC and AC circuits, generating units and motors, code and wiring practices, industrial repair and maintenance, telephone systems. Class: 2 hours; laboratory: 4 hours.

52a, 52b ADVANCED INDUSTRIAL ELECTRICITY (3-3)
   Prerequisite: Electricity 51a, 51b.
   A practical course on the application of the many types of electrical equipment and control. Emphasis on improved maintenance, trouble shooting and utilization of heavy industrial electrical equipment. Class: 2 hours; laboratory: 4 hours.

ELECTRONICS

Electronics 57ab, 58ab, 59ab may be divided in the evening classes. Approximately half of each course will be offered each semester. Five units of credit will be assigned for the "a" part of each and four units of credit for the "b" part. Time assignment will be the same for both "a" and "b," i.e., three hours of class and four hours of laboratory.

50 INTRODUCTION TO ELECTRONICS (3)
   A survey of electronics including basic concepts and their applications to business, entertainment, science, and industry. This is the beginning course for electronics majors but can be used by others as a general education course. Class: 3 hours.
53 MATHEMATICS FOR ELECTRONICS (4)

Designed to provide the mathematical background necessary for a major in electronics. This course includes a review of elementary algebra and presents the principles of advanced algebra, geometry, trigonometry, slide rule, and vector algebra. Class: 4 hours.

56 INTRODUCTORY ELECTRONICS LABORATORY (1)

Concurrent requirement: Electronics 50.

An introduction to laboratory techniques and electronics equipment, and demonstration of principles presented in Electronics 50. Laboratory: 3 hours.

57ab BASIC ELECTRONICS (9)

Prerequisites: Electronics 50 and 56 or acceptable experience; and Electronics 53 with grade of C or better or pass qualifying examination.

A coordinated lecture and laboratory presentation of the principles of DC and AC theory, components and circuits. Included are voltage sources, magnetism, motors and generators, measuring devices, resonance, and filters. Class: 6 hours; laboratory: 9 hours.

58ab INTERMEDIATE ELECTRONICS (9)

Prerequisite: Electronics 57ab.

A coordinated lecture and laboratory presentation of electron tube and semi-conductor theory, components and circuits. Included are power supplies, amplifiers, oscillators, and special circuits. Extensive practice in constructing, measuring, and trouble-shooting these circuits. Class: 6 hours; laboratory: 9 hours.

59ab ADVANCED ELECTRONICS (9)

Prerequisite: Electronics 58ab.

A coordinated lecture and laboratory presentation of electronics systems. Included are receivers, transmitters, modulation systems, antennas, microwave and radar equipment, television, computers, industrial electronic systems and others. Laboratory work includes measurements and trouble-shooting methods using a variety of commercial test equipment found in industrial laboratories. Class: 6 hours; laboratory: 9 hours.

69a, 69b CODE PRACTICE (1-1)

Instruction and practice in sending and receiving International Morse Code. Laboratory: 3 hours.

71a, 71b SPECIAL PROJECTS IN ELECTRONICS (1-1)

72a, 72b SPECIAL PROJECTS IN ELECTRONICS (2-2)

Prerequisite: Electronics 57 or 58 with a grade of B.

This course provides a variety of practical experiences in the field of electronics. Students will work on projects of their choice under the supervision of an instructor. The work will be of a research and/or experimental nature similar to that done by research and development technicians in industry. Laboratory: 3 hours for each unit.
77 DIGITAL COMPUTERS (4)
Prerequisite: Electronics 86b.
Binary arithmetic, Boolean algebra; a review of the basic digital computer circuits and how they are connected together in various combinations to form the main sections of digital computers. In the laboratory the characteristics of the basic circuits are studied and then many of the Boolean algebra equations are set up using the circuits demonstrating how a digital computer performs the basic arithmetic processes. Class: 3 hours; laboratory: 3 hours.

84a MICROWAVES AND RADAR (3)
Prerequisite: Electronics 59ab.
Introduction to ultra-high frequency and microwave techniques, radar circuits and various types of radar systems. Methods of making various microwave measurements and operation of several radar systems. Class: 3 hours.

84b MICROWAVES AND RADAR (2)
Prerequisite: Electronics 84a.
A detailed analysis of radar and microwave systems. Application of alignment and trouble-shooting procedures. Demonstration and practice in the use of specialized equipment. Class: 1 hour; laboratory: 2 hours.

86a TRANSISTORS (4)
Prerequisite: Electronics 58ab.
Introduction to semi-conductor concepts, transistor parameters, circuit theory, and applications and testing methods.
Laboratory work to demonstrate theories of semi-conductor devices. The characteristics of diodes and transistors are measured and compared. Various types of basic circuits using transistors are constructed and analyzed. Use of commercial instruments for the measurement of semi-conductor parameters and for the display of characteristic curves. Class: 3 hours; laboratory: 3 hours.

86b TRANSISTOR PULSE AND SWITCHING CIRCUITS (4)
Prerequisite: Electronics 86a.
Introduction to basic transistor switches and their use in multi-vibrators, blocking oscillators, sweep generators, and gating circuits. The use of other semiconductor switching devices such as Zener diodes, tunnel diodes, silicon controlled switches, and unijunction transistors. Many of the circuits are set up in the laboratory and their characteristics determined. Class: 3 hours; laboratory: 3 hours.

87a MAGNETIC AMPLIFIERS AND SERVOMECHANISMS (3)
Prerequisite: Electronics 59ab.
Introduction to the fundamentals and circuits of magnetic amplifiers and servomechanisms. Class: 3 hours.
ENGINEERING

Mechanical Drafting—See Drafting 1a, 1b.
Architectural Drafting—See Drafting 3a, 3b.
Advanced Mechanical Drafting—See Drafting 51a, 51b.
Illustration Drafting—See Drafting 52.
Blueprint Reading (Building Trades)—See Drafting 54a.
Blueprint Reading (Machine Trades)—See Drafting 54b.
Blueprint Reading (Industrial Trades)—See Drafting 54c.
Engineering Layout Drafting—See Drafting 55a.
Aeronautical Drafting—See Aeronautics 71a.
Aircraft Blueprint Interpretation—See Drafting 72a, 72b.

1a, 1b PLANE SURVEYING (3-3)
Prerequisite: Trigonometry. Engineering 1a is prerequisite to Engineering 1b.
The theory and practice of plane surveying including lectures, field practice, map work, and computations. Class: 2 hours; field practice: 3 hours.

8 PROPERTIES OF MATERIALS (2)
Prerequisite: Physics 4a.
The properties, selection and use of engineering materials. Class: 2 hours.

10 ENGINEERING MEASUREMENTS (3)
(Not offered 1963-64)
Concurrent requirement: Mathematics 3.
Theory and practice of engineering measurements: laboratory exercises and demonstrations using engineering systems; analysis of errors, adjustment and evaluation of measurements; applications to surveying; measurements in various fields of engineering. Class: 2 hours; laboratory: 3 hours.

25a ENGINEERING GRAPHICS (3)
Prerequisites: One year of high-school mechanical drawing or Drafting 1a, plane geometry.
Descriptive geometry; the fundamental principles of orthogonal projection and graphical solutions of typical space problems. Class: 1 hour; laboratory: 6 hours.

25b ENGINEERING GRAPHICS (2)
Prerequisites: Engineering 25a and Mathematics 3a. Mathematics 3a may be taken concurrently.
Fundamental principles of graphical scales, graphical calculus, nomography, graphical statics, and assembly and detail drafting. The determination of empirical equations from experimental data. Class: 1 hour; laboratory: 5 hours.
26 ENGINEERING KINEMATICS (2) (Not offered 1963-64)
Prerequisite: Engineering 25b.
General principles of kinematics, determining the displacements, velocities, and accelerations in mechanisms. The study of the relative motion of machine parts. Class: 1 hour; laboratory: 5 hours.

35 ENGINEERING MECHANICS: STATICS (3)
Prerequisite: Physics 4a.
Force systems and equilibrium conditions with emphasis on engineering problems covering structures, machines, distributed forces, and friction. Class: 3 hours.

45 PROPERTIES OF MATERIALS (3)
Prerequisite: Physics 4a.
A laboratory course in the properties, selection, and use of engineering materials. Class: 2 hours; laboratory: 3 hours.

ENGLISH

Business English—See Business English 53a, 53b, 56.

†1a COMPOSITION (3)
Prerequisite: Satisfactory score on English placement test or grade of B or better in English 91a or 91b.
The careful study and practice of writing techniques (including exposition, description, argumentation, and narration), the frequent writing of compositions, and the study of parallel prose forms. This course is planned to enable every student to use writing as a tool, to teach able students to become proficient craftsmen, and to assist the exceptional students who strive for artistry. Class: 3 hours.

1b LITERATURE AND COMPOSITION (3)
Prerequisite: One of the following: English 1a; English 2a; B average in three years of standard high-school English courses; or permission of the instructor.
An intensive course in writing based upon the reading and study of general literature. A study of five types of literature—short story, poetry, biography, essay, drama. Class: 3 hours.

2a, 2b INTRODUCTION TO JOURNALISM (3-3)
Recommended preparation: Typewriting and some interest and skill in writing.
Prerequisite: English 2a is prerequisite to English 2b.
The theory and techniques of newswriting. A study of the American newspaper as a social institution and commercial enterprise. A survey of journalistic vocations for both terminal and transfer students. In exceptional cases some students may be permitted to take English 2a in lieu of English 1a. Class: 2 hours; laboratory: 3 hours.
2c, 2d  EDITORIAL TECHNIQUES (3-3)
Prerequisite: English 2a, 2b or permission of the instructor.
Recommended preparation: English 1a, 1b; Social Science.
Instruction and practice in copy editing, headline writing, news display, typography, and illustration. Practical experience in planning and directing all phases of publishing the college paper, of which this group comprises the editorial staff. Class: 2 hours; laboratory: 3 hours.

5a, 5b  WORLD LITERATURE (3-3)
Prerequisites: 6 units of English, European history or philosophy, or permission of the instructor. English 5a is not prerequisite to 5b.
A survey of outstanding writers and thinkers from the earliest times to the present. Among the authors considered are Homer, Aeschylus, Sophocles, Euripides, Aristophanes, Vergil, Ovid, Catullus, Dante, Rabelais, Cervantes, Montaigne, Molière, Voltaire, Rousseau, Goethe, Dostoievsky, Ibsen, Mann, Kazantzakis. Class: 3 hours.

7a, 7b, 7c, 7d  ADVANCED WRITING (3-3-3-3)
Prerequisite: English 1a or permission of the instructor.
A writing seminar for students who like to write and increase their writing proficiency. The progression is from simple prose forms to more complex forms, such as the short story, according to the student's interests and abilities. In exceptional cases students may be permitted to take English 7 in lieu of English 1a. Class: 3 hours.

34a  THE NOVEL (3)
Prerequisite: English 1a, or permission of the instructor.
A survey of the novel from the 18th to the 20th century. Reading, oral and written discussion of several novels published since 1850. Class: 3 hours.

34b  SHAKESPEARE (3)
Prerequisite: English 1a, or permission of the instructor.
Intensive reading, together with oral and written discussion, of a group of selected plays of Shakespeare. Class: 3 hours.

34c  AMERICAN LITERATURE (3)
Prerequisite: English 1a, or permission of the instructor.
Intensive reading, with oral and written discussion of significant American literature of the nineteenth and twentieth centuries. Among the writers studied are Hawthorne, Poe, Melville, Whitman, Twain, Crane, Howells, James, Sandburg, Frost, Lewis, O'Neill, Eliot, Wolfe, Faulkner, and Hemingway. Class: 3 hours.

34d  THE SHORT STORY (3)
Prerequisite: English 1a, or permission of the instructor.
Intensive reading, with oral and written discussion of a wide and comprehensive selection of American, British, and translated short stories. Class: 3 hours.

120
34e DRAMATIC LITERATURE (3)
Prerequisite: English 1a, or permission of the instructor.
Intensive study of representative dramatic literature from the classic, medieval, Renaissance, and modern periods. Emphasis is placed on the manner in which the plays reflect the societies in which they were written. Class: 3 hours.

36a, 36b SURVEY OF ENGLISH LITERATURE (3-3)
Prerequisites: Sophomore standing, English 'l a and 1b or permission of the instructor. English 36a is not prerequisite to English 36b.
A chronological survey of the history and development of English literature from Beowulf through the eighteenth century (first semester) and from 1800 to the present (second semester). Class: 3 hours.

61 WRITTEN COMMUNICATION FOR SUPERVISORS (3)
A review of practical writing mechanics and techniques for supervisors with special emphasis on report writing, business letters, memos, bulletins, and manuals. This course is a part of the Supervision curriculum. Class: 3 hours.

63 TECHNICAL REPORT WRITING (3)
Preparation of technical reports and problems in scientific writing. Class: 3 hours.

91a FUNDAMENTALS OF COMPOSITION (3)
Not open to students who have taken English 53a with a grade of C.
An intensive study of the basic mechanics of English composition. This course is usually not transferable but may provide three of the six units of English required for the A.A. or A.S. degree. It is also designed to help insufficiently trained students to qualify for English 1a. To qualify for English 1a in this course a student must earn a B grade. Class: 3 hours.

91b READING AND COMPOSITION (3)
Prerequisite: English 91a or English 53a.
Oral and written discussion of selected short stories, novels, and plays with major emphasis on contemporary writers. The course is usually non-transferable but may provide three of the six units required for the A.A. or A.S. degree. To qualify for English 1a in this course a student must earn a B grade. Class: 3 hours.

95a IMPROVEMENT OF READING (1)
A remedial course designed to increase comprehension and vocabulary. Class: 1 hour.

95b IMPROVEMENT OF READING (1)
Prerequisite: English 95a.
Designed to increase reading speed and at the same time to increase comprehension and vocabulary. Class: 1 hour.

98 VOCABULARY BUILDING (2)
Training and exercises in developing a usable and practical vocabulary for everyday communication. Class: 2 hours.
FRENCH

1, 2 ELEMENTARY FRENCH (4-4)
Prerequisite for French 2: French 1, or two years of high-school French and permission of the instructor.

An intensive, methodical presentation to develop facility in the skills of aural comprehension, speaking, reading and writing, with control of basic structures in both oral and written form. Stress is placed upon early oral competence. Class: 5 hours; laboratory: individual practice.

3, 4 INTERMEDIATE FRENCH (4-4)
Prerequisite for French 3: French 2, or three years of high-school French and permission of the instructor. For French 4: French 3, or four years of high-school French and permission of the instructor.

Grammatical structures of more complex nature. Literary selections of increasing challenge. Considerable opportunity afforded for conversational practice, meaningful writing and development of cultural insight. French 4 rounds up the two-year course as a complete unit and establishes a firm foundation for further study. Class: 5 hours; laboratory: individual practice.

GEOGRAPHY

1a, 1b PRINCIPLES OF GEOGRAPHY (3-3)
Prerequisite: Eligibility for English 1a. Geography 1a is not prerequisite to 1b.

A survey of the interrelationship of man and his physical environment, including such problems as natural resources, world trade, population distribution, and pollution of the earth's surface, approached through the examination of distinct culture regions and economic and political systems. This course emphasizes the cumulative effects of regional geography on culture. Recommended for prospective elementary school teachers. Class: 3 hours.

GEOLOGY

1a PHYSICAL GEOLOGY (4)
A study of the action of geologic forces, earth structure and topography, and an introduction to minerals, rocks and geologic maps. At least two Saturday field trips are required. Class: 3 hours; laboratory: 3 hours.

1b HISTORICAL GEOLOGY (4)
The geologic ages, the development of life, stratigraphy, geography and climate of the continents. At least two Saturday field trips are required. Class: 3 hours; laboratory: 3 hours.
GERMAN

1, 2 ELEMENTARY GERMAN (4-4)
Prerequisite for German 2: German 1 or two years of high-school German.
Basic grammar; elementary reading, writing, and conversation. Outside reading of prose and poetry. The foreign language laboratory is available for regular pronunciation drill and the acquisition of speech patterns. Class: 5 hours; laboratory: individual practice.

3, 4 INTERMEDIATE GERMAN (4-4)
Prerequisite for German 3: German 2 or three years of high-school German. For German 4: German 3 or four years of high-school German.
German 3 reviews basic grammar and presents more involved constructions as a preparation for advanced reading. Outside rapid reading of a novel. German 4 develops ability to translate texts of intellectual interest into mature English. Both courses afford opportunities for speaking and writing German on an increasingly advanced level and include readings on German history and culture. Class: 5 hours; laboratory: individual practice.

10 GERMAN CONVERSATION (2)
Prerequisite: German 2 or equivalent.
Practice in the patterns of natural German speech through dialogs which lead to extemporaneous conversation. Class: 2 hours.

HISTORY

2 HISTORY OF THE UNITED STATES (3)
Prerequisite: Eligibility for English 1a.
A survey of the history of the United States from colonial times to the present with the purpose of understanding our nation as it is today. This course fulfills the history requirement for graduation, and prepares the student for upper division work. Class: 3 hours.

+4a, 4b INTRODUCTION TO WESTERN CIVILIZATION (3-3)
Prerequisite: Eligibility for English 1a. Although it is recommended, 4a is not prerequisite to 4b.
A survey of the history of man from the earliest times to the present, designed to show how the world in which we live came to be. First semester to 1650, with major emphasis on Middle Ages; second semester to the present time, with major emphasis on the rise of the national state. Class: 3 hours.
17a, 17b  HISTORY OF THE UNITED STATES (3-3)
   Prerequisites: Eligibility for English 1a. Although it is recommended, 17a is not prerequisite to 17b.
   The development of the United States from its colonial foundations to the present time. First semester to 1865; second semester from 1865 to date. Only the year course gives credit for American History and U.S. Constitution requirement, including state and local government. Class: 3 hours.

39  HISTORY OF CALIFORNIA AND THE PACIFIC COAST (3)
   Prerequisite: Eligibility for English 1a.
   Recommended preparation: Completion of the United States history requirement.
   The story of California through the explorations, the Spanish settlements, the Mexican regime, the gold rush, the American conquest and occupation to statehood. Emphasis is upon geography and the development of transportation and communication, political activities, immigration, commerce, industry, education, art and culture to the present. Class: 3 hours.

57  HISTORY OF THE UNITED STATES (3)
   A study of American history from colonial times to the present. This course is designed for students in occupational or technical majors and fulfills the history requirement for graduation. Class: 3 hours.

HOME ECONOMICS

1a  FOODS AND FOOD PREPARATION (3)
   New methods of selecting, storing, preparing and serving foods. Class: 2 hours; laboratory: 3 hours.

1b  MEAL PLANNING (3)
   Home Economics 1a is not prerequisite to 1b.
   Meal planning and food preparation. Equipping and setting the table and serving. Class: 2 hours; laboratory: 3 hours.

1c  NUTRITION AND DIET THERAPY (3)
   Home Economics 1a and 1b are not prerequisites.
   A study of diet and food selection, food values, and food requirements for different ages, designed for the Professional Nursing students. Class: 2 hours; laboratory: 3 hours.

2a  CLOTHING (3)
   Principles of garment construction. Efficient use of commercial patterns, materials and equipment; planning and organization for work simplification. Practical problems based on abilities and experience of students. Laboratory: 6 hours.
2b TEXTILES AND CLOTHING (3)
   Prerequisite: Home Economics 2a or equivalent.
   Development of sewing skills. Basic pattern alterations. Selection and use of new fabrics and finishes. Laboratory: 6 hours.

5a HOUSE PLANNING AND EQUIPMENT (2)
   Planning the home in reference to health and efficiency; selection, care and arrangement of equipment and adaptation to needs of families. Class: 2 hours.

5b HOME MANAGEMENT (2)
   Efficient management of the home and family finances. Class: 2 hours.

10 ELEMENTARY NUTRITION (2)
   Good nutrition in relation to health and family economy. This course meets the nutrition requirement for prospective teachers. Open to men and women. Class: 2 hours.

15a CRAFTS (1)
   This course is the same as Art 15a.
   An introduction to book-binding, paper sculpture, papier mâché, and block printing, suggested for students preparing to become elementary teachers. Laboratory: 3 hours.

15b CRAFTS (1)
   This course is the same as Art 15b.
   A survey of crafts dealing with clay modeling, mosaic, enameling on copper, puppet construction, and mask making. Suggested for students preparing to become elementary teachers. Laboratory: 3 hours.

15c, 15d TEXTILE CRAFTS (1-1)
   This course is the same as Art 15c, d.
   A laboratory course emphasizing textile design and printing. Includes silk screen printing, stenciling, block printing and weaving. Especially recommended for elementary education majors. Laboratory: 3 hours.

21 ART IN DRESS (2)
   This course is the same as Art 21.
   A study of fashion and personal appearance, including choice of clothes and accessories based on principles of color and design as they relate to physical characteristics and personality. Survey of proper methods of personal care and grooming. Class: 2 hours.

23 INTERIOR DECORATION (3)
   This course is the same as Art 23.
   Interior design based on family and individual needs involving the combination of furniture, color, fabrics, lighting, accessories and architectural materials. Development of good taste through comparison studies, films, and directed field trips. Class: 3 hours.
31 TAILORING (3)
Prerequisite: Previous college clothing courses or permission of the instructor.
Selection of suitable materials and techniques of custom tailoring with emphasis on fitting and finishing. Laboratory: 6 hours.

50 NUTRITION AND HOME MANAGEMENT (2)
Enrollment limited to Vocational Nursing students.
Presents the psychological and socio-economic principles underlying normal nutrition and the changes and adaptation of those principles in illness. Relates theory to hospitalized patients. Provides experience in planning, cooking, and serving meals. Class: 1 hour; laboratory: 3 hours.

51a, 51b, 51c, 51d CLOTHING (1-1-1-1)
New quick methods in sewing with emphasis on fitting and pattern alterations. Not for home economics majors. Laboratory: 3 hours.

52a, 52b, 52c, 52d TAILORING (1-1-1-1)
Prerequisite: Previous clothing course or experience in sewing.
Laboratory and tailoring techniques for women's clothing. Students construct tailored dresses, coats or dressmaker suits for themselves. Laboratory: 3 hours.

55a MODERN HOSTESS (1)
Informal entertaining in the home including dining room equipment, budgeting, and flower arrangements. Class: 1 hour.

HYDRAULICS

51a INSTALLATION AND MAINTENANCE OF FLUID POWER SYSTEMS (2)
A practical course in hydraulic fundamentals, presenting basic information required for proper installation and maintenance of pumps, valves, piping, etc. Each laboratory session will be devoted to actual testing and trouble shooting of hydraulic equipment, and each lecture will cover related circuits and components. Class: 1 hour; laboratory: 2 hours.

HYGIENE

1 HEALTHFUL LIVING (2)
Instruction in the scientific progress in the health field today. Recent developments will be considered in the areas of mental hygiene, heredity, narcotics, drug addiction, venereal disease, safety education, and many phases of positive health. This course satisfies the state requirement for instruction in fire prevention, first aid, public safety and accident prevention. Class: 2 hours.
JOURNALISM

Introduction to Journalism—See English 2a, 2b.
Editorial Techniques—See English 2c, 2d.

57a, 57b, 57c, 57d  INTRODUCTION TO PUBLICATIONS  
(2-2-2-2)  
Students in this course are the staff of the college yearbook. This course provides experience in ordering and editing materials from writers, artists, photographers, and printers. Class: 2 hours; laboratory: 3 hours.

LITHOGRAPHY

1a, 1b  BASIC LITHOGRAPHY (6-6)  
Instruction and practical experience in the manipulative skills of offset printing including camera work. Related instruction includes history of printing and the various branches of graphic arts with emphasis on lithography. This course may be acceptable to state colleges offering a degree in printing management. Class: 3 hours; laboratory: 9 hours.

2a, 2b  ADVANCED LITHOGRAPHY (3-3)  
Prerequisite: Lithography 1a, 1b.  
A continuation of instruction and practical experience in the skills of lithography. Class: 2 hours; laboratory: 3 hours.

51a, 51b  LITHOGRAPHY (6-6)  
Instruction in manipulative skills in the six areas of work necessary to lithography: copy preparation, camera, layout and stripping, platemaking, presswork, binding. Related technical instruction provided as needed. Class: 3 hours; laboratory: 9 hours.

61a, 61b  LITHOGRAPHY PRACTICE (3-3)  
Prerequisite: Lithography 1a, 1b and 2a, 2b. The latter may be taken concurrently. Additional instruction and experience in lithography. Class: 1 hour; laboratory: 6 hours.

MATHEMATICS

Business Mathematics—See General Business 78.  

A  INTERMEDIATE ALGEBRA (5)  
Prerequisite: Plane geometry and one year of high-school algebra with grade of C or better.  
A brief review of fundamental operations, factoring, and fractions leading to a study of functions, systems of linear equations, exponents and radicals, logarithms, quadratic equations, ratio and proportion, variations, progressions and the binomial theorem. Class: 5 hours.
C TRIGONOMETRY (3)
Prerequisites: The equivalent of three years of high-school mathematics, including elementary algebra, plane geometry and advanced algebra. If Mathematics A is taken at Chaffey College, a grade of C or better is required.

The theory of trigonometry with emphasis on the analytical aspects needed in analytic geometry, calculus and physics. Application is also made to practical problems in engineering. Students with credit in high-school trigonometry with a grade of C or better are limited to 2 units of credit in Mathematics C. Class: 3 hours.

E ALGEBRA AND TRIGONOMETRY REVIEW (3)
Prerequisites: Intermediate algebra and trigonometry.
A review of algebra and trigonometry designed to develop the proficiency needed to continue in more advanced courses in mathematics. Class: 3 hours.

1 COLLEGE ALGEBRA (3)
Prerequisite: High-school mathematics through trigonometry with a grade of A or B or Mathematics C with a grade of C.
Inequalities, complex numbers, theory of equations, permutations, combinations, probability, determinants, partial fractions, and infinite series. Class: 3 hours.

2 MATHEMATICS OF FINANCE (3)
Prerequisites: Two years of high-school algebra or Mathematics A.
A study of the problems of computing interest (simple and compound), conversion periods, annuities, discounts, final and present values, bonds, sinking funds and amortization. Class: 3 hours.

Note: Mathematics 3 (or Mathematics 3a and 3b), 4a, 4b and 14ab are a sequence necessary to meet the lower-division mathematics requirement in engineering for UCB and UCLA. These courses are also basic for a mathematics or physics major. This sequence will meet lower-division mathematics requirements at almost any college or university, but the student is advised to study the curriculum listed in the catalog of the institution to which he plans to transfer. For new students beginning fall 1964, the math sequence for engineering, mathematics or physics majors will be Mathematics 12a, 12b, 14ab.

3a PLANE ANALYTIC GEOMETRY (3)
Prerequisites: Trigonometry with a grade of C. Pass qualifying algebra examination.
A study of rectangular and polar coordinates, locus problems, conic sections, algebraic and transcendental curves, parametric equations and families of curves. Class: 3 hours.

3b FIRST COURSE IN CALCULUS (3)
Prerequisite: Analytic geometry with grade of C.
Differentiation and integration of algebraic functions with applications to problems of physics and engineering. Class: 3 hours.
3 PLANE ANALYTIC GEOMETRY AND FIRST COURSE IN CALCULUS (5)
Prerequisites: Trigonometry with a grade of C or better. Pass qualifying algebra examination.
A study of rectangular and polar coordinates, locus problems, conic sections, algebraic and transcendental curves, parametric equations and families of curves. Differentiation and integration of algebraic functions with applications to problems in physics and engineering. Class: 5 hours.

12a FIRST COURSE IN CALCULUS (5)
Prerequisites: Analytic geometry with a grade of C. Pass qualifying examination.
Introduction to differential and integral calculus with applications. Class: 5 hours.

12b SECOND COURSE IN CALCULUS (5)
Prerequisite: Mathematics 12a with a grade of C.
A continuation of Mathematics 12a, including the study of vectors and solid analytic geometry, partial differentiation, multiple integrals, infinite series, differential equations, with applications to engineering and physics. Class: 5 hours.

4a SECOND COURSE IN CALCULUS (5)
Prerequisite: Mathematics 3 or Mathematics 3b with a grade of C.
Differentiation and integration of transcendental functions and formal integration by various devices. Parametric and polar equations, curvature, theorem of mean value, infinite series, expansion of functions, differential equations, and hyperbolic functions. Class: 5 hours.

4b THIRD COURSE IN CALCULUS (3)
Prerequisite: Mathematics 4a.
Solid analytic geometry, partial differentiation, multiple integrals, simple differential equations and vectors, with applications to scientific and engineering problems. Class: 3 hours.

14ab ADVANCED ENGINEERING MATHEMATICS (4)
Prerequisite: Mathematics 4b, or Mathematics 4.
This one-semester course is primarily for engineering students. It includes infinite series, Fourier series, partial differentiation, line integrals, elementary vector analysis, complex numbers, and differential equations, with application to the field of physics and mechanics. Class: 4 hours.

50 INDUSTRIAL MATHEMATICS (3)
A course in basic mathematics. Includes decimals, fractions, percentages, ratio, proportion, continued proportions, areas and volumes of common geometric shapes, plane geometry, and simple trigonometry. Class: 3 hours.
53a SLIDE RULE (1)
Prerequisite: Intermediate algebra.
Basic operations of the slide rule including division, multiplication, proportion, squares, and cubes of numbers, and their square roots and cube roots. Required for Chemistry 1a, Physics 10, and Physics 2a, 2b. Recommended for all physical science and engineering majors. Class: 1 hour.

53b SLIDE RULE (1)
Prerequisite: Trigonometry (may be taken concurrently).
A continuation of Math 53a, but using the log-log slide rule. Operations concerning the inverted and folded scales, trigonometric functions, solutions of right and oblique triangles, natural logarithms, and exponential functions. Required for engineering physics. Class: 1 hour.

53ab SLIDE RULE (2)
Prerequisite: Intermediate algebra for the first half of the course. Trigonometry for the second half of the course (may be taken concurrently).
A combination of Mathematics 53a and 53b. Class: 2 hours.

90 ARITHMETIC REVIEW (1 or 2)
Basic operations in elementary arithmetic. Students may drop this course with 1 unit of credit at the end of eight weeks, upon proof of satisfactory arithmetic skill. Class: 3 hours.

91 ELEMENTARY ALGEBRA (3)
Fundamental operations on signed numbers, linear and quadratic equations, special products and factoring, functions, and systems of linear equations. Class: 4 hours.

92 PLANE GEOMETRY (3)
Prerequisites: One semester of high-school algebra, or Mathematics 91, or permission of the instructor.
The principles of plane geometry. Class: 3 hours.

MEDICAL SECRETARY

55 BEGINNING MEDICAL OFFICE PROCEDURES (3)
(Formerly Medical Receptionist—Secretarial Science 55)
A beginning course which provides specialized training for receptionists in medical offices, clinics, and hospitals. Included are studies of ethics and law, specialized record keeping, insurance forms (introduction only), routine office procedures, telephone techniques, appointments, receiving and dismissing patients, making financial arrangements, billing and banking. Class: 3 hours.
56 ADVANCED MEDICAL OFFICE PROCEDURES (3)
   (Formerly Medical Receptionist 56)
   Prerequisite: Completion of Secretarial Science 55 or completion of
   Medical Receptionist 55 or six or more months of experience in a doctor's
   office or in a comparable position in a hospital.
   A study of inter-personal relationships between office personnel and
   patients. Emphasis is placed on the role of the medical receptionist, her
   specific duties and limitations. Special attention will be given to insurance
   forms in current use. Class: 3 hours.

57 BEGINNING MEDICAL TERMINOLOGY (3)
   A course designed to familiarize those in, or related to, the medical
   field with the origin, correct spelling, pronunciation, meaning, and
   current usage of common medical terms and their application to clinical
   records and reports. Emphasis will be placed on the roots, prefixes, suffixes,
   medical abbreviations, symbols, and terms common in patients' records
   and laboratory reports. Class: 3 hours.

58 ADVANCED MEDICAL TERMINOLOGY (3)
   Recommended preparation: Medical Secretary 57 or two years experience
   in a doctor's office or in a comparable position in a hospital.
   A course designed to familiarize those in, or related to, the medical field
   with the origin, spelling, pronunciation, meaning and current usage of
   anatomical, physiological, pathological, descriptive, and surgical terms.
   Nomenclature centered around the various body systems. Class: 3 hours.

MINERALOGY

1 DETERMINATIVE MINERALOGY (2)
   Prerequisite: High-school chemistry or Geology 1a or permission of
   instructor.
   A practical elementary course in the identification of common important
   minerals by physical methods in the laboratory, supplemented by lecture-
   demonstrations in properties of minerals and crystals, and by blow-pipe
   analysis. Class: 1 hour; laboratory: 3 hours.

MUSIC

1a, 1b MUSICIANSHIP (3-3)
   Prerequisite: Elementary knowledge of notation and concurrent enroll-
   ment in Music 21a, 21b or satisfactory completion of piano proficiency
   examination. Music 1a is prerequisite to Music 1b.
   A basic course for the music major and minor. May be elected by the
   general college student who has the necessary prerequisites. Includes
   fundamentals of notation, structure of scales, intervals, chords and basic
   forms. Ear training and development of skill in sight singing are em-
   phasized. Class: 3 hours; laboratory: 1 hour.
MUSIC

2a, 2b  HISTORY AND APPRECIATION OF MUSIC (3-3)
A survey of the development of music with emphasis on the aesthetic, formal and historical factors, correlated with parallel movements in the other arts. Music 2a is not prerequisite to 2b. Class: 3 hours.

3a, 3b  HARMONY (3-3)
Prerequisite: Music 1a, 1b, 21a, 21b, and concurrent enrollment in Music 21c, 21d or satisfactory completion of piano proficiency examination. Music 3a is prerequisite to Music 3b.
A complete study of diatonic harmonies, including a review of triad formations, and principles of voice-leading. Extensive study of seventh chords, ninth chords, chromatic harmonies and modulation as found in the works of composers of the period of common harmonic practice. Includes ear training and four-part dictation. Class: 3 hours; laboratory: 1 hour.

7a, 7b  ELEMENTARY VOICE (1-1)
Understanding of the vocal process through individual analysis and class demonstration. The study of song material suited to the beginner in voice, adapted to the individual abilities of each student. Application of good vocal techniques to performance of art songs in various languages. Class: 1 hour.

7c, 7d  ADVANCED VOICE (1-1)
Prerequisite: Music 7a, 7b or permission of instructor.
Mastery of principles of tone production, technique, interpretation. Building of repertoire of standard songs in English, French, German, and Italian. Class: 1 hour.

8a, 8b, 8c, 8d  WOMEN'S GLEE CLUB (2-2-2-2)
The study and performance of standard choral literature of all periods for women's voices in three and four parts. Attention is given to problems of ensemble singing, interpretation, diction, rhythm and vocal control. No previous choral experience is necessary. Includes study of literature for mixed chorus in conjunction with the Men's Glee Club. Attendance at public performances is required. Class: 5 hours. (2 hours in combined rehearsal with Men's Glee Club)

9a, 9b, 9c, 9d  MEN'S GLEE CLUB (2-2-2-2)
A study in the appreciation and performance of a wide variety of standard choral literature for men's voices. No previous choral experience is necessary. Emphasis is placed on the development of the ability to carry independently the assigned part, and on problems of phrasing, interpretation, diction and vocal control. Includes study of literature for mixed chorus in conjunction with the Women's Glee Club. Attendance at public performances is required. Class: 5 hours. (2 hours in combined rehearsal with Women's Glee Club)

132
11a, 11b  FUNDAMENTALS OF MUSIC (2-2)
Not open to students of Music 1a, 1b.
A course designed for the beginner in the use of music as a language.
It is recommended for elementary education majors and geared to the
needs of the classroom teacher. The course is usually not a part of a
music major. Class: 2 hours.

15a, 15b, 15c, 15d  BAND AND ORCHESTRA
INSTRUMENTS (1-1-1-1)
Prerequisite: Permission of instructor.
A course designed to give the student a knowledge of the fundamentals
of band and orchestra instruments through study and practice. Music
15a covers woodwinds; 15b, brasses; 15c, strings; 15d, percussion. For
those who do not have their own instruments, arrangements for securing
instruments may be made through the department. Class: 2 hours:

16a, 16b, 16c, 16d  CONCERT CHOIR (2-2-2-2)
Prerequisite: A tryout. High-school experience preferred.
Open to all interested students, this course includes the study and per-
formance of the best choral music of all periods selected from represen-
tative works of American, English, Italian, German, French, and Russian
composers. Attendance at public performances is required. Class: 5 hours.
17a, 17b, 17c, 17d  PIANO (1-1-1-1)
Prerequisite: Music 21d or passing of a proficiency examination.
Piano music grades 3-10 (write the Music Department for a list of
simple music for each grade). The student who wishes credit for private
study of piano must make arrangements for this at the beginning of the
semester, and these arrangements must be approved by the member of
the music faculty in charge and by the registrar. A midterm and final
examination will be given by a member of the music faculty. Class: 1 hour.

18a, 18b, 18c, 18d  STRING ENSEMBLE (1-1-1-1)
Prerequisite: Permission of instructor.
Study and performance of classic and modern string ensemble reperto-
ire. Open only to advanced instrument players. For those who do not
have their own instruments, arrangements for securing instruments may
be made through the department. Class: 3 hours.

19a, 19b, 19c, 19d  WOODWIND ENSEMBLE (1-1-1-1)
Prerequisite: Permission of instructor.
Study and performance of classic and modern compositions and tran-
scriptions for woodwind ensembles. Open only to advanced woodwind
instrument players. For those who do not have their own instruments,
arrangements for securing instruments may be made through the depart-
ment. Class: 3 hours.

20a, 20b, 20c, 20d  BRASS ENSEMBLE (1-1-1-1)
Prerequisite: Permission of instructor.
Study and performance of standard and modern compositions and
arrangements for brass ensemble groups. Open only to advanced players
of brass instruments. For those who do not have their own instruments,
arrangements for securing instruments may be made through the depart-
ment. Class: 3 hours.

21a, 21b, 21c, 21d  BEGINNING CLASS PIANO (1-1-1-1)
The fundamentals of piano technique, tone production, rhythm, sight
reading, interpretation, general musicianship and keyboard facility for
those who have had little or no previous piano experience. Designed to
meet basic piano requirements for music majors and minors transferring
from a junior college to a four-year college. Class: 2 hours.

27a, 27b  MUSIC APPRECIATION (3-3)
No previous music training necessary.
Representative musical works from various periods are heard and
discussed with reference to melody, rhythm, harmony, and form in order
to develop an understanding of music from the listener's point of view.
Class: 3 hours.
37a, 37b  ORCHESTRATION (2-2)
Prerequisite: Enrollment in Music 3 (Harmony) or permission of the instructor. The student must have some competence on the piano, or a band or orchestra instrument, and must read both treble and bass clefs.
A basic course in orchestration designed to meet the practical needs of terminal music students, as well as to provide an essential foundation for students preparing for further study of orchestration and instrumenta-
tion. Study of instruments of the orchestra and band. Fundamental scoring techniques for various instrumental groups. Opportunity for students to hear their works performed by a Chaffey College instrumental organization. Public performance of outstanding scores. Class: 2 hours.

46a, 46b, 46c, 46d  COLLEGE BAND (2-2-2-2)
An instrumental organization to provide training and experience in a wide sampling of the band repertoire through rehearsals and performances. For those who do not have their own instruments, arrangements for securing instruments may be made through the department.
Class: Fall Semester: 3 hours plus performance at specific school activi-
ties and concerts.
Spring Semester: 3 hours class; laboratory, 1 hour plus perform-
ances at concerts and a limited number of school activities.

57a, 57b, 57c, 57d  PIANO PLAYING (CHORD METHOD)  
(1-1-1-1)
This course is designed to give the beginner a practical way to play social music. It is especially designed for the beginner who would like to play as a hobby and for the pianist who wants to add social music to his traditional piano repertory. The study begins with chords that are formed through a practical approach to the keyboard. These chords are played freely over the full range of the keyboard to accompany familiar melodies. Laboratory lecture: 1 hour.

NURSING

Nutrition and Home Management—See Home Economics 50.

PROFESSIONAL NURSING

1  FUNDAMENTALS OF NURSING 1 (5)
Prerequisite: Admission to major in professional nursing.
An introductory course to nursing and the role of the nurse in the maintenance of health. A study of the history of nursing and its influence on nursing practices today. Visits are made to local community health agencies to provide an awareness of resources available. The student must first be introduced to communicative skills as a basis for establishing the inter-personal relationships necessary to effective patient-centered care. This is followed by an introduction to basic principles of nursing with concurrent application of those principles in the care of patients in the clinical area. Class: 3 hours; laboratory: 6 hours.
2 FUNDAMENTALS OF NURSING 2 (6)
Prerequisite: Successful completion of Anatomy 1, Physiology 1 and Nursing 1, or permission of instructor.
The study of nursing problems in the care of patients with medical and surgical conditions; diet and drug therapy integrated. Operating room technique integrated with surgical nursing to provide background for solution of nursing problems involved in these areas. Class: 2 hours; laboratory: 12 hours.

3 FUNDAMENTALS OF NURSING 3 (3)
Prerequisites: Bacteriology 1, Fundamentals of Nursing 2 or permission of instructor.
An intermediate course in the care of adults with more complex medical-surgical nursing problems. A close correlation between lecture and clinical laboratory experience is maintained. Legal implications involved in giving nursing care are studied as well as the nurse's role in care and responsibility to society and to the profession of nursing. Class: 3 hours; laboratory: 16 hours. (Six-week summer session.)

4 FUNDAMENTALS OF NURSING 4 (5)
Prerequisites: Fundamentals of Nursing 3 or permission of instructor.
An advanced course in the care of adults with medical-surgical nursing problems. The emotional and sociological needs of the individual as well as his physiological needs are considered in the making of a nursing diagnosis, in the plan for nursing and its implementation. A study of the health team and community referral agencies prepares the student to assist patients in preparing to return to their homes. Patient teaching includes self-care in the hospital and in the home. Home visits are made to follow through on the effectiveness of patient teaching. Class: 2 hours; laboratory: 9 hours.

5 FUNDAMENTALS OF NURSING 5 (3)
Prerequisite: Psychology 1a.
A study of the emotional problems of the mentally ill and their effect on nursing care. Guided clinical experience in the care of psychiatric patients is included. Stress is placed on the adaptation of principles learned as they apply to the care of the patient who has emotional problems resulting from illness. Changes in the care of and the social acceptance of the mentally ill are also discussed. Class: 1½ hours; laboratory: 5½ hours.

6a FUNDAMENTALS OF NURSING 6a (5)
Prerequisites: Psychology 1a, Sociology 1a.
A study of the mother and the newborn in relation to the physiological, emotional, and sociological needs of the family. All normal aspects of pregnancy, labor, the puerperium, and care of the newborn are given concurrently with Nursing 6b (nursing care of the child) to strengthen the understanding of growth, development, and family life. Guided clinical experience is provided for the student in the care of the newborn and in the care and health teaching of the mother. Deviations from the normal are included as the course progresses. Class: 2 hours; laboratory: 9 hours.
6b FUNDAMENTALS OF NURSING 6b (4)

Prerequisites: Psychology 1a, Sociology 1a.

A study of the growth and development of the child with emphasis on the major health problems of this age group. Starting with the "normal child" as a basis, deviations from the normal are presented as the course progresses. The physiological, emotional, sociological, and cultural needs of the child and his family are integrated. Guided clinical laboratory experiences are provided in selected community health agencies and clinics. The concept of family-centered maternal-child health is strengthened by concurrent learnings in Nursing 6a (maternity nursing). Class: 1 hour; laboratory: 9 hours.

7 FUNDAMENTALS OF NURSING (5)

Prerequisites: Psychology 1b, Fundamentals of Nursing 1-6.

A study of advanced problems in the care of adults and children. Nursing problems include all phases of patient care. The student makes a nursing diagnosis, plans the care, implements it, and evaluates it from the standpoint of its effectiveness in meeting total patient needs. The role of the nurse in the health team and in "team nursing" is studied. Advanced study in the legal responsibilities of the nurse. Class: 6 hours; laboratory: 24 hours. (Six-week summer session.)

VOCATIONAL NURSING

51a PRINCIPLES FUNDAMENTAL TO NURSING (8)

Prerequisite: Acceptance in the vocational nursing program.

Study of the role of the vocational nurse, her personal and legal responsibilities. Introduction to medical terminology. Study of the basic needs of people including physical, nutritional, and emotional factors affecting health and well being. Adaptation of these principles to the care of adults and children. Introduction to pharmacology. Class: 9 hours.

51b PRINCIPLES OF MEDICAL AND SURGICAL NURSING (6)

Offered in second semester.

Prerequisite: Successful completion of the first semester of the program.

Study of anatomy and physiology with emphasis on its importance in nursing care. Specific application is made to the care of adults, children, and the aged with medical and/or surgical nursing problems. Adaptation of nutritional, medicinal, and physical needs to the varying age groups. Class: 9 hours for 12 weeks.
51c PRINCIPLES OF MEDICAL AND SURGICAL NURSING (8)
Offered in the third semester.
Prerequisite: Successful completion of preceding courses in the program.
A continuation of the study of anatomy and physiology with emphasis on its importance in the application of principles of nursing care. The emotional needs of patients both in the general and psychiatric hospital are studied. Class: 9 hours.

52a FUNDAMENTALS CLINICAL LABORATORY (6)
Prerequisite: Acceptance in the Vocational Nursing program.
Guided practice in the application of nursing care in the college and clinical laboratories. Assignments are based on the theory presented in Nursing 51a. Laboratory: 20 hours.

52b MEDICAL-SURGICAL CLINICAL LABORATORY (5)
Offered in second semester.
Prerequisite: Successful completion of the first semester of the program.
Guided practice in the application of nursing care to selected patients in the clinical laboratory. Adaptation of nursing care to age groups ranging from childhood to senescence. Introduction to rehabilitation measures. Laboratory: 22½ hours for 12 weeks.

52c MEDICAL-SURGICAL CLINICAL LABORATORY (7)
Prerequisite: Successful completion of preceding courses in the program.
Guided practice in the application of advanced nursing care to adults with medical-surgical nursing problems. Laboratory: 22½ hours.

53 PRINCIPLES OF OBSTETRICAL NURSING (3)
Prerequisite: Acceptance in the Vocational Nursing program.
Study of the anatomy and physiology of reproduction and of the development of the embryo. Emphasis is placed on the normal prenatal, labor, and postpartum cycle with discussion of abnormalities which occur and the role and the responsibilities of the nurse in these situations. Care of the newborn is included. Class: 9 hours for 6 weeks.

54 OBSTETRICS CLINICAL LABORATORY (4)
Prerequisite: Acceptance in the Vocational Nursing program.
Guided practice in the application of nursing care in the clinical laboratory areas concerned with labor, delivery, and postpartum care of mothers and the nursery care of the newborn. Laboratory: 18 hours for 6 weeks.
PHILOSOPHY

6a, 6b INTRODUCTION TO PHILOSOPHY (3-3)

Prerequisites: Eligibility for English 1a and Sophomore standing or University eligible. Psychology recommended. Philosophy 6a is prerequisite to 6b.

A consideration of the methods and values of philosophic thought. The first semester concerns itself with idealism, naturalism, man's freedom, and knowledge. The second semester is a discussion of the problems of ethics, introducing ancient and contemporary points of view. Class: 3 hours.
PHYSICAL EDUCATION

PHYSICAL EDUCATION

The physical education program is designed to fulfill the state requirement for graduation from junior college and to provide a basic program by which students may improve their physical condition, secure useful neuro-muscular development, and gain recreational skills and interests which will continue in later life.

The state law requires each regular student to attend satisfactorily 120 minutes of physical education per week for the first four consecutive semesters in attendance. All physical education sections are scheduled for 2 class hours per week. (Students over 25 years of age or carrying less than 9 units, are exempt from the P.E. requirement.)

Activity sections may be repeated for credit. P.E. majors, however, should, if possible, register for two different activities each semester. Women P.E. majors are encouraged to take four semesters of W.A.A. plus other activities and the required professional courses.

The uniform worn in physical education classes must be furnished by the student. Men students are required to wear a complete uniform, consisting of T-shirt, red shorts, tennis shoes and sweat socks. The regulation uniform for women consists of a white shirt, red shorts, tennis shoes and white socks.

The classification of courses is as follows: 1-19, activity courses; 20-30, professional activity courses; 31-49, team sports; 50-89, professional vocational courses.

Note: No more than two activity classes may be taken concurrently.

ACTIVITY COURSES FOR MEN:

1 a, b, c, d General Activities 12 a, b, c, d Bowling
3 a, b, c, d Trampoline 13 a, b, c, d Gymnastics
4 a, b, c, d Swimming 14 a, b, c, d Badminton
5 a, b, c, d Basketball 15 a, b, c, d Square Dancing
7 a, b, c, d Tennis 16 a, b, c, d Body Building
8 a, b, c, d Golf 17 a, b, c, d Modern Dancing
10 a, b, c, d Wrestling 18 a, b, c, d Social Dancing
19 a, b, c, d Archery

Each class: 2 hours for 1/2 unit.

PROFESSIONAL COURSES FOR MEN:

20 INTRODUCTION TO PHYSICAL EDUCATION (2)
A required lecture course for all men physical education majors, designed to interpret physical education for the prospective major student and give him a better understanding and over-all view of the field. Class: 2 hours.

21 PROFESSIONAL ACTIVITIES (1 1/2)
Fundamental knowledge and skills in swimming and wrestling for major and minor students in physical, recreation, and health education. Class: 3 hours.
PHYSICAL EDUCATION

22 PROFESSIONAL ACTIVITIES (1 1/2)
Fundamental knowledge and skills in track and field, and tumbling and apparatus for major and minor students in physical, recreation, and health education. Class: 3 hours.

23 RECREATIONAL ACTIVITIES (2)
Discussion of the philosophy of recreation with emphasis on the use of recreation agencies, the development of recreational skills and knowledge for use in the community. The course is of value to those interested in recreation, scouting, church groups, physical education and related fields. Class: 1 hour; laboratory: 1 hour.

24 LIFE SAVING AND WATER SAFETY (2)
Prerequisite: Ability to swim.
Basic skills in techniques and methods of life saving. This course is based on the American Red Cross Life Saving and Water Safety Course. Class: 2 hours.

25 DANCE THEORY (2)
Lectures and discussion in modern dance, social dance, and folk dance. The course is required of all men physical education majors. Class: 1 hour; laboratory: 3 hours.

26 FIRST AID (2)
The purpose is to acquire knowledge and skills for emergency treatment of all injured until the physician arrives and to create an active interest in accident prevention. Equivalent to Standard and Advanced First Aid as offered by American Red Cross. Class: 2 hours.

28 PROFESSIONAL ACTIVITIES (1 1/2)
Fundamental knowledge and skills in football for major and minor students in physical, recreation, and health education. Participation in football is desirable but not required. Class: 2 hours.

29 PROFESSIONAL ACTIVITIES (1 1/2)
Fundamental knowledge and skills in basketball and baseball for major and minor students in physical, recreation, and health education. Participation in baseball and basketball is desirable but not required. Class: 2 hours.

TEAM SPORTS FOR MEN:
34 a, b, c Swimming 39 a, b, c Baseball
35 a, b, c Basketball 40 a, b, c Wrestling
36 a, b, c Water Polo 41 a, b, c Football
37 a, b, c Tennis 45 a, b, c Track
38 a, b, c Golf 46 a, b, c Cross Country

50a, 50b PRINCIPLES AND PRACTICES OF OFFICIATING (2-2)
An analysis and interpretation of the rules of sports including the mechanics and practices of officiating for: (a) football and basketball; (b) baseball, softball and track. Class: 2 hours.
54 WATER SAFETY (2)
Prerequisite: P.E. 24 or valid Red Cross Senior Life Saving Card.
Advanced skills in techniques and methods of life saving and water safety instruction. Leads to the American Red Cross water safety instructor's certificate. Class: 2 hours.

ACTIVITY COURSES FOR WOMEN:

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<th>Group</th>
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<td>General Activities</td>
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<td>Women's Athletic Assn. (W.A.A.)</td>
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<td>3</td>
<td>a, b, c, d</td>
<td>Trampoline</td>
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<td>4</td>
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<td>9</td>
<td>a, b, c, d</td>
<td>Archery</td>
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Each class: 2 hours for 1/2 unit.

PROFESSIONAL COURSES FOR WOMEN:

20 INTRODUCTION TO PHYSICAL EDUCATION (2)
A required lecture course for all women physical education majors, designed to interpret physical education for the prospective major student and give her a better understanding and over-all view of the field. Class: 2 hours.

23 RECREATIONAL ACTIVITIES (2)
Discussion of the philosophy of recreation with emphasis on the use of recreation agencies; the development of recreational skills and knowledge for use in the community. The course is of value to those interested in recreation, scouting, church groups, physical education and related fields. Class: 3 hours.

24 LIFE SAVING AND WATER SAFETY (2)
Prerequisite: Ability to swim.
Basic skills in techniques and methods of life saving. This course is based on the American Red Cross Life Saving and Water Safety Course. Class: 2 hours.

25 DANCE THEORY (2)
Lectures and discussion in modern dance, social dance, and folk dance. The course is required of all women physical education majors. Class: 1 hour; laboratory: 3 hours.

26 FIRST AID (2)
The purpose is to acquire knowledge and skills for emergency treatment of all injured until the physician arrives and to create an active interest in accident prevention. Equivalent to Standard and Advanced First Aid as offered by American Red Cross. Class: 2 hours.

30a, 30b OFFICIATING IN TEAM SPORTS (1-1)
Theory and practice of techniques and officiating for the team sports. The course is required of all women physical education majors. Class: 1 hour; laboratory: 1 hour.
PHYSICAL EDUCATION

30c OFFICIATING IN INDIVIDUAL SPORTS (1)
Theory and practice of techniques and officiating for the individual sports. This course is required of all women physical education majors. Class: 1 hour; laboratory: 1 hour.

54 WATER SAFETY (2)
Prerequisite: P.E. 24 or valid Red Cross Senior Life Saving Card. Advanced skills in techniques and methods of life saving and water safety instruction. Leads to the American Red Cross water safety instructor's certificate. Class: 2 hours.
PHYSICS

2a, 2b  GENERAL PHYSICS (4-4)
Prerequisites: Recommended grades in high-school geometry and intermediate algebra, and chemistry or physics. Trigonometry is also required but may be taken concurrently. Students in this course must be able to perform the basic operations of the slide rule.
Designed for those students who need one year of general physics as a prerequisite to medical or other professional courses. Mechanics, heat, sound, light, magnetism, electricity, atomic and nuclear physics. Class: 3 hours; laboratory: 3 hours.

4a  ENGINEERING PHYSICS (4)
Prerequisites: Recommended grade in high-school physics or C grade or better in Physics 10 or Engineering 1a and Mathematics 3. Proficiency with a slide rule is required, but Mathematics 53b may be taken concurrently.
Mechanics and properties of matter; the first course in a three-semester series required of physics, chemistry, and engineering majors. Class: 3 hours; laboratory: 3 hours.

4b  ENGINEERING PHYSICS (4)
Prerequisite: Physics 4a.
Electricity and magnetism. Required for students whose major subject is physics, chemistry or engineering. Class: 3 hours; laboratory: 3 hours.

4c  ENGINEERING PHYSICS (4)
Prerequisite: Physics 4a.
Heat, wave motion, sound and light. Required for students whose major is physics, chemistry or engineering. Class: 3 hours; laboratory: 3 hours.

10  INTRODUCTION TO PHYSICS (3)
Prerequisites: Elementary algebra and plane geometry.
An introductory survey course in classical and modern physics with experimental illustrations. This course is designed primarily for liberal arts students, and is open to students with or without high-school physics. Students enrolled in this course who desire laboratory work in lower division physics are referred to Physics 11. Class: 3 hours:

11  LABORATORY COURSE FOR PHYSICS 10 (1)
Prerequisites: Elementary algebra and plane geometry. Student must be enrolled in or have completed Physics 10.
One three-hour laboratory period per week designed for students of Physics 10. Laboratory: 3 hours.
PHYSIOLOGY

1 HUMAN PHYSIOLOGY (4)
Recommended preparation: College biology, anatomy, chemistry. Lectures and correlated experimental laboratory exercises on the dynamic nature of the life processes of the human body. Topics covered include physiology of the cell and functions of the various systems of the body, such as the circulatory, respiratory, digestive, excretory, endocrine, muscular, skeletal, and nervous.

An introductory course for Pre-nursing students, Physical Education majors and for students in general who wish to broaden their understanding of man. Class: 3 hours; laboratory: 3 hours.

POLICE SCIENCE

10 INTRODUCTION TO LAW ENFORCEMENT (3)
Basic principles of criminal behavior, penal code and related laws, investigation including report writing and collection and preservation of evidence, vehicle code and accident investigation, police organization, duties of the sheriff and police ethics. Class: 3 hours.

11 ADMINISTRATION OF JUSTICE (3)
Basic principles of court organization and procedures, administration of criminal justice, rules of evidence, courtroom behavior, laws of arrest, search and seizure, juvenile law, interrogation and public relations. Class: 3 hours.

21 CRIMINAL LAW (3)
Prerequisite: Completion of Police Science 10 or 11 or two years of peace officer experience.
The sources of criminal law. Discussion of the "elements" of crime and their importance in prosecution. Examination of the more common penal statutes of the United States and of California. The place of county and municipal ordinances in law enforcement. Field trips may be required. Class: 3 hours.

24 CRIMINAL EVIDENCE (3)
Prerequisite: Completion of Police Science 10 or 11 or two years of peace officer experience.
Rules defining evidence and its admissibility in court decisions. Discussion of the relevancy, materiality, and competency of evidence. Examination of the "hearsay" rule and the exceptions thereto—opinion evidence and problems arising in the use of physical evidence in court. Field trips may be required. Class: 3 hours.
25 PATROL PROCEDURES (3)
Prerequisite: Completion of Police Science 10 or 11 or two years of peace officer experience.
Responsibilities, techniques and methods of police patrol including purpose and types of patrol, observation of persons, places and incidents. The handling of the more common types of incidents and complaints, mechanics of arrest and public relations, field note taking and the preparation of reports. Class: 3 hours.

26 CRIMINAL INVESTIGATION (3)
Prerequisite: Completion of Police Science 10 or 11 or two years of peace officer experience.
Fundamental principles and problems of an investigator. Techniques of searches at the crime scene, observation, surveillance and interrogation. Techniques and principles of gathering, evaluating and preserving physical evidence. Preliminary and follow-up investigation. Class: 3 hours.

27 TRAFFIC CONTROL (3)
Prerequisite: Completion of Police Science 10 or 11 or two years of peace officer experience.
A study of accident causes, investigation techniques, legal responsibility of the investigating officer, interview techniques, diagramming of accident scenes, accident photography and hit-and-run investigations. Class: 3 hours.

28 JUVENILE PROCEDURES (3)
Prerequisite: Completion of Police Science 10 or 11 or two years of peace officer experience.
Training received in this course will develop the ability to establish and direct an effective juvenile unit within a police department or other law enforcement agency. The student will learn the peculiarities of juvenile law as compared to adult law, together with mechanics of its application. Modern techniques of crime prevention as it affects children and youth; the latest methods for handling the individual offender. Class: 3 hours.

29 FIRST AID, DEFENSIVE TACTICS, AND FIREARMS (3)
Prerequisite: Completion of Police Science 10 or 11 or two years of peace officer experience.
The immediate and temporary care given in case of accident, illness and emergency childbirth. Course shall qualify students for the Advanced Red Cross First Aid Certificate. The moral aspects, legal provisions, safety precautions and restrictions covering the use of firearms; firing of side-arms and shotguns. Protection against persons armed with dangerous and deadly weapons; demonstration and drill in a limited number of holds and come alongs; restraining of prisoners and the mentally ill; fundamental use of the baton. Class: 3 hours.
30  VICE CONTROL (3)
   Prerequisite: One year of basic law enforcement or one year of police work.

32  CRIMINOLOGY (3)
   Types of criminal behavior; causative factors in criminality; changing interpretations in control and treatment; methods of dealing with criminals from law enforcement point of view; the roles of police, courts, probation, prisons, parole. Class: 3 hours.

33  VEHICLE CODE (3)
   Prerequisite: Basic law enforcement course of employment in law enforcement work.
   Development of traffic codes, California Vehicle Code, history of traffic law enforcement in California, study of the California Vehicle Code and related laws with reference to traffic problems. Class: 3 hours.

34  ARREST, SEARCH, AND SEIZURE (3)
   Prerequisite: Two years of experience in peace officer work, or two years of basic law enforcement courses, or permission of instructor.
   The laws governing the cases and manner in which arrest may be or must be made. Warrants of arrest and search warrants. Discussion of the rights of defendants and responsibilities of arresting persons. The practical mechanics of taking a person into custody with emphasis on the safety of the officer and others. Field trips may be required. Class: 3 hours.

35  POLICE ADMINISTRATION (3)
   Prerequisite: Two years experience in police work or twelve units in Police Science courses.
   Analysis of the functional divisions of the modern police department. Application of principles of organization and administration. The structure and functions of the patrol divisions, personnel problems and management training and public relations, consideration of activities involved in records management, communications, jails, property, supply and transport. Class: 3 hours.

36  POLICE SUPERVISION (3)
   Prerequisite: Police Science 10 and 11 or two years of peace officer experience.
   Techniques of police supervision. Responsibility of supervisors in management, selection, placement and training of personnel; employee discipline and morale, performance rating and promotion. Course is designed primarily for first-level supervisors. Class: 3 hours.
38 CRIMINAL INTERROGATION (3)
Prerequisites: Two years of police experience or twelve units of police science.
Recommended: Psychology 1a and Police Science 24.
Study of methods of handling witnesses, informants, and suspects. Psychological and physiological considerations in interrogation are covered in this area of investigation. Class: 3 hours.

39 CRIMINALISTICS (3)
Prerequisites: Two years of police experience.
Techniques in the collection, preservation, analysis and interpretation of common types of physical evidence: footprints, tire tracks, tool marks, hair, blood, textiles, stains, dust, dirt, and similar items. Methods of narcotic identification and intoxication determination; casting and moulage; questioned documents; ballistics and explosives; court presentation and expert witness. Class: 3 hours; laboratory: 3 field trips.

POLITICAL SCIENCE

1a INTRODUCTION TO GOVERNMENT (3)
Prerequisite: Eligibility for English 1a.
An introduction to the principles of government with particular emphasis on the theory and practice in the United States, including state and local governments. Analysis of such concepts as sovereignty, political power, law, pressure group, and foreign policy. This fulfills the state requirement in political institutions. Class: 3 hours.

1b THE MODERN PRACTICE OF GOVERNMENT (3)
Prerequisites: Political Science 1a or 2 or University eligible.
Selected European and Asian governments are compared with each other and with American practices. Includes such concepts as political forces and factions, environmental influences, law, and the structure and processes of government. Class: 3 hours.

2 AMERICAN POLITICAL INSTITUTIONS (3)
Prerequisite: Eligibility for English 1a. Not open to students who have credit for Political Science 1a.
A study of American government, including its philosophical bases, constitutional principles, institutional structure, political processes, and problems of foreign and domestic policy. This course includes state and local government and fulfills the state requirement for political institutions. Class: 3 hours.

7 SURVEY OF INTERNATIONAL RELATIONS (3)
Prerequisite: Eligibility for English 1a and one semester of history or political science or University eligible.
A survey of the principles and current problems of international relations covering the basic nature of the world's political structure; a study of such concepts as sovereignty, nationalism, collective security, foreign policy, and the United Nations. Class: 3 hours.
51 STUDENT GOVERNMENT THEORY (1)
   Prerequisite: Membership on the Student Council or permission of instructor.
   A study of the legal, educational, and philosophical bases for student
government, and a survey of current organizational and administrative
practices in California junior colleges. Class: 1 hour.

52a, 52b STUDENT GOVERNMENT PRACTICE (1-1)
   Prerequisite: Membership on the Student Council.
   Participation in the government of the Associated Students by membership
on the Student Executive Committee. Class: Student Council meetings
as scheduled.

57 AMERICAN POLITICAL INSTITUTIONS (2)
   A study of American government and politics at the national, state
and local levels. This course is designed for students in occupational and
technical majors and fulfills the state requirement for political institutions. Class: 2 hours.

58 MUNICIPAL GOVERNMENT (2)
   American municipalities and their relationships to other governmental
jurisdictions, particularly state governments. Aspects of the California
State Constitution with reference to such municipal subjects as home rule,
referendum, initiative, recall, metropolitan government. Class: 2 hours.

PSYCHOLOGY

41a GENERAL PSYCHOLOGY (3)
   An introductory course designed to acquaint the student with the
scientific means by which psychology attempts to understand, describe,
predict, and control the behavior of living organisms. Topics included
are: perception, emotion, intelligence, thought, and personality. Class: 3 hours.

1b ELEMENTARY PHYSIOLOGICAL PSYCHOLOGY (3)
   Prerequisite: Grade of C in Psychology 1a.
   Study of the integrative relations of psychological processes to nervous,
muscular, and glandular features of the response mechanism, including
the structure and functions of the sense organs. Class: 3 hours.

33 PERSONAL AND SOCIAL ADJUSTMENT (3)
   Prerequisites: Grade of C in Psychology 1a or University eligible.
   Advanced study of psychological approaches to the understanding of
problems of human adjustment. Recommended for students majoring in
education, medicine, social work, religion, or other areas where insight
into human behavior would be of value. Class: 3 hours.
51 STUDY TECHNIQUES (1)
Organization and methods of successful studying at the college level, getting work done, scheduling, the strategy of study, taking notes, taking examinations, writing reports. The course also includes the basic psychology underlying the student's attitudes, habits, motivation, thinking, and objectives as they influence his success in college. Class: 1 hour.

52 BASIC PSYCHOLOGY FOR SUPERVISORS (2)
Prerequisite: Industrial Supervision 51. Not open to students of Psychology 1a.
Designed to assist the supervisor in understanding the people with whom he works. Emphasizes learning processes, emotions, attitudes, and personalities. Enrollment limited to Industrial Supervision students. Class: 2 hours.

53 HUMAN RELATIONS FOR SUPERVISORS (3)
Prerequisite: Psychology 52.
Practical application of basic psychology in building better employer-employee relationships by studying human relations techniques. Enrollment limited to Industrial Supervision students. Class: 3 hours.

55 APPLIED PSYCHOLOGY (3)
An introductory course covering some theoretical but emphasizing more of the practical and applied aspects of the study of psychology, including the understanding of everyday human behavior and the study of aptitudes, intelligence, learning, emotions, group living, and personality. Not open to students who have credit for Psychology 1a. Class: 3 hours.

56 VOCATIONAL AND EDUCATIONAL PLANNING (1)
Designed to aid the student who is uncertain about his educational and vocational plans. Lectures, readings, community speakers, and plant tours assist each student to examine his ability and interests in order to determine his potential place in society. Aptitude and interest tests are included. Class: 1 hour.

57 ORIENTATION FOR INTERNATIONAL STUDENTS (1)
A required course for all visa students, offered in the fall semester each year. It treats U.S., California and local laws, including immigration laws. Orientation to college life and policies. Class: 2 hours per week for ½ semester.

RUSSIAN

51a, 51b RUSSIAN CONVERSATION (2-2)
An elementary course in conversational Russian. This course is not designed to meet the academic requirements for transfer students. Class: 4 hours.
SOCIAL SCIENCE

31a, 31b SPECIAL PROJECT IN SOCIAL SCIENCE (1)
32a, 32b SPECIAL PROJECT IN SOCIAL SCIENCE (2)
33a, 33b SPECIAL PROJECT IN SOCIAL SCIENCE (3)

Prerequisite: Permission of instructor.

These special project courses are designed for the capable, well motivated student. Each student explores and develops a project in (or a report on) a social science area of his own interest. Student-instructor agreement as to the nature and extent of the project must be reached before the student may sign for the course. Class: 1, 2 or 3 hours.

SOCIOLGY

1a GENERAL SOCIOLOGY (3)

Prerequisites: Eligibility for English 1a and Sophomore standing or University eligible.

Survey of the characteristics of social life, the processes of social interaction, the principal social institutions of society, and the tools of sociological investigation. Class: 3 hours.

1b GENERAL SOCIOLOGY (3)

Prerequisite: Sociology 1a.

Identification and analysis of contemporary social problems in the United States. An attempt is made to establish criteria by which the educated layman can judge the probable effectiveness of various schemes for social betterment. Class: 3 hours.

2 MARRIAGE AND THE FAMILY (3)

Open to both single and married students, the course deals with marital adjustment and family problems in a changing society. Materials are presented and discussed which are designed to aid the students to solve their own problems of mate selection, courtship, marriage and family life. Class: 3 hours.

SPANISH

1, 2 ELEMENTARY SPANISH (4-4)

Prerequisite for Spanish 2: Spanish 1 or two years of high-school Spanish.

Elementary Spanish is a two-semester course covering the essentials of grammar, pronunciation, and vocabulary building through daily readings. Students make regular use of the foreign language laboratory for pronunciation drill and the acquisition of speech patterns. Class: 5 hours; laboratory: individual practice.
3, 4 INTERMEDIATE SPANISH (4-4)
Prerequisite for Spanish 3: Spanish 2 or three years of high-school Spanish. For Spanish 4: Spanish 3 or four years of high-school Spanish.
Spanish 3 begins with a review of grammar essentials, then concentrates on practical exercises in reading, translation and composition.
Spanish 4 continues the approach of Spanish 3 while emphasizing proper speaking habits and thinking in the language. Class: 5 hours; laboratory: individual practice.
51a, 51b, 51c, 51d CONVERSATIONAL SPANISH (2-2-2-2)
An elementary course in conversational Spanish. This course is not designed to meet the academic requirements for transfer students. Class: 4 hours.

SPEECH

1 PUBLIC SPEAKING (3)
The accurate use of English in oral communication. Designed to develop self-confidence, effective organization, and the techniques of presentation of informal and formal speeches. Class: 3 hours.
2a, 2b PUBLIC SPEAKING (3-3)
Prerequisite: Speech 1.
A continuation of Speech 1 with emphasis on psychological and artistic aspects of speech. Provides opportunities for intercollegiate contest speaking including debate, oratory, and other speaking activities. Class: 3 hours.
3 VOICE PRODUCTION FOR SPEECH (2)
Fundamentals of good speech, including breathing, posture, resonance, projection, and articulation. Tape recordings are used for analysis. Class: 2 hours.
4 INTERPRETIVE READING (2)
Practice in oral interpretation of poetry, prose, and dramatic literature. Recommended for English, speech and drama majors. Class: 2 hours.
6a, 6b, 6c, 6d FORENSICS (1-1-1-1)
Prerequisite: High-school debate and/or forensics experience preferred. Students with appropriate background and experience may enroll in this course for one of the following: debate, oratory, extemporaneous speaking, discussion, interpretation, or impromptu speaking. Intercollegiate participation in the chosen area is required. Class: 1 hour; laboratory: 2 hours.
8 GROUP LEADERSHIP AND DISCUSSION METHODS (2)
Prerequisite: Speech 1, or Speech 5, or permission of instructor.
Practice in group leadership and discussion methods. Includes chairmanship, rules of order, group control, committee and conference techniques, forms of discussion, obtaining cooperative group planning and action. Class: 2 hours.

153
55, 56 PRACTICAL SPEECH (1-1)
Practical experiences in group and informal speaking. Class: 1 hour.

61 ORAL COMMUNICATION FOR SUPERVISORS (3)
A course designed to develop speaking and listening skills for Supervision students. This course is a part of the Supervision curriculum. Class: 3 hours.

STATISTICS

1 ELEMENTARY STATISTICS (3)
Prerequisites: One year of high-school algebra or Mathematics 91 with a grade of B or better.
This course is intended for majors in the natural and social sciences using statistics as a tool. Topics covered are measures of central tendency, variation, regression, correlation, index numbers, and time series analysis. Probability, sampling, sampling distributions, estimation, and tests of statistical hypotheses. Standard methods and their validity illustrated by sampling experiments. Class: 3 hours.

SUPERVISION

Supervision courses are open to employees who are now in supervisory positions or are aspiring to become foremen or supervisors.
Oral Communication for Supervisors—See Speech 61.
Written Communication for Supervisors—See English 61.
Basic Psychology for Supervisors—See Psychology 52.
Human Relations for Supervisors—See Psychology 53.

51 ELEMENTS OF SUPERVISION (2)
An introductory course covering the responsibilities of a supervisor in industry, such as training, rating promotion, quantity-quality control, and employee relationships. Class: 2 hours.

54 SUPERVISORS' RESPONSIBILITIES FOR MANAGEMENT OF PERSONNEL (2)
Prerequisites: Supervision 51, Psychology 52, Psychology 53.
A study of personnel techniques such as selection, placement testing, orientation, training, and counseling for promotion and transfer. Class: 2 hours.

55 ORGANIZATION AND MANAGEMENT FOR SUPERVISORS (3)
Prerequisite: Supervision 51.
Planning, directing, controlling, and coordinating. Establishing lines of authority, functions of departments, and policies. Class: 3 hours.
56 INDUSTRIAL RELATIONS (2)
Prerequisite: Supervision 51 and Psychology 52.
An introductory course designed to develop a greater understanding of the laws, regulations, and court decisions which govern employer-employee relations in industry. Class: 2 hours.

57 INDUSTRIAL ECONOMICS (2)
Not open to students who have credit for Economics 1a.
A study of the production of wealth and income, money and credit, value and price, and the socio-economic influences of government policies and national income. The nature of the institutions and practices which determine our social and economic environment. Class: 2 hours.

58 WORK SIMPLIFICATION (2)
The basic principles of work simplification, including motion study fundamentals and time study techniques, are applied to job methods improvement. Class: 2 hours.

59 COST CONTROL FOR SUPERVISORS (3)
Factors in cost control such as materials, waste, salvage, quality control, quantity control, and time control. Class: 3 hours.

60 JOB ANALYSIS FOR WAGE ADMINISTRATION (2)
Wage administration is studied through job descriptions, job specifications and classification and evaluation. The history of wage plans as related to present wage practices. Class: 2 hours.

62 SAFETY TRAINING AND FIRE PREVENTION (2)
Safety instruction through a study of fire and accident prevention, good housekeeping, machine guarding and protective equipment, and the development of good techniques of reporting. First aid rules, fire regulations, and the state industrial accident code are studied. Class: 2 hours.

63 DEVELOPING THE EMPLOYEE THROUGH TRAINING (2)
Prerequisite: Supervision 51.
A basic teacher-training course designed to train supervisors to give on-the-job instruction to employees assigned to them. Class: 2 hours.

65 MANAGEMENT CONTROL AND THE SUPERVISOR (2)
Prerequisite: Supervision 55.
Basic principles of quality, quantity, and production control; organization, personnel control, and delegation of responsibility. Class: 2 hours.

71a, 71b BASIC FERROUS METALLURGY (2-2)
Prerequisite: Supervision 71a is prerequisite to 71b.
A basic course in ferrous production metallurgy designed to familiarize the supervisor with materials, equipment, and operating practices for primary steel production. Steel specifications and properties are studied. The second half of the course includes processing of steel and steel products application. Class: 2 hours.
75a CORROSION PROTECTION (2)
Methods and techniques commonly used in the metals industry for the prevention of corrosion. Of particular interest to supervisors who have maintenance responsibility. Class: 2 hours.

76 PRINCIPLES OF METALLURGY (3)
Prerequisite: High-school mathematics and preferably one course in either physics or chemistry at the high-school level.
An introduction to engineering materials, the crystalline structure of metals, phase equilibrium and alloy systems, heat treatment, determination of mechanical and physical properties, and the processing of metals and alloys including casting, welding, and finishing. This course gives a background in basic metallurgy which should fill the needs of any user of metallic materials. Class: 3 hours.

82a, 82b INDUSTRIAL STATISTICS AND QUALITY CONTROL (3-3)
Prerequisite: Mathematics A or equivalent. Supervision 82a is prerequisite to 82b.
The application of statistical methods to industry: frequency tabulations, averages, dispersions, ranges, confidence limits, and charts for statistical determination of process capabilities. Class: 3 hours.

WELDING

51a FUNDAMENTALS OF WELDING (2)
A combination laboratory and lecture course in methods of oxy-acetylene, electric arc, heli-arc and resistance welding including use of torches, regulators, cutting equipment, laying beads in arc and acetylene welding, and welding different types of joints. Class: 1 hour; laboratory: 5 hours.

51b FUNDAMENTALS OF WELDING (2)
Prerequisite: Welding 51a.
This is a continuation of Welding 51a to provide more experience in cutting and burning, brazing, and various types of welding. Class: 1 hour; laboratory: 5 hours.

ZOOLOGY

1a, 1b GENERAL ZOOLOGY (5-5)
Prerequisite: One semester of biological science or permission of instructor.
An introduction to zoology dealing with the structure, functions, and evolution of animal life. Laboratory work is based on the study and observation of living and preserved materials. Valuable to the general student as well as to the biology specialist. This course meets the needs of those majoring in medicine, dentistry, agriculture, or physical education. Class: 3 hours; laboratory: 6 hours.
# INDEX

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>55, 97-98</td>
</tr>
<tr>
<td>Administrative Staff</td>
<td>6</td>
</tr>
<tr>
<td>Admission, Requirements for</td>
<td>23, 24</td>
</tr>
<tr>
<td>Admission to Advanced Standing</td>
<td>26</td>
</tr>
<tr>
<td>Advertising</td>
<td>102</td>
</tr>
<tr>
<td>Aeronautics</td>
<td>51-52, 88-91</td>
</tr>
<tr>
<td>Airline Stewardess</td>
<td>53</td>
</tr>
<tr>
<td>Alpha Gamma Sigma</td>
<td>41</td>
</tr>
<tr>
<td>Anatomy</td>
<td>91</td>
</tr>
<tr>
<td>Announcement of Courses</td>
<td>88-156</td>
</tr>
<tr>
<td>Anthropology</td>
<td>91</td>
</tr>
<tr>
<td>Architecture</td>
<td>68</td>
</tr>
<tr>
<td>Art</td>
<td>54, 91-95</td>
</tr>
<tr>
<td>Associated Students</td>
<td>37</td>
</tr>
<tr>
<td>Associated Student Body Card</td>
<td>38</td>
</tr>
<tr>
<td>Astronomy</td>
<td>96</td>
</tr>
<tr>
<td>Athletic Eligibility</td>
<td>40</td>
</tr>
<tr>
<td>Attendance Regulations</td>
<td>30</td>
</tr>
<tr>
<td>Auditing Classes</td>
<td>30</td>
</tr>
<tr>
<td>Bacteriology</td>
<td>96-97</td>
</tr>
<tr>
<td>Biology</td>
<td>96-97</td>
</tr>
<tr>
<td>Blueprint Reading</td>
<td>112</td>
</tr>
<tr>
<td>Bookkeeping</td>
<td>101</td>
</tr>
<tr>
<td>Botany</td>
<td>97</td>
</tr>
<tr>
<td>Buildings</td>
<td>20</td>
</tr>
<tr>
<td>Business Administration</td>
<td>68, 98-99</td>
</tr>
<tr>
<td>Business Education Courses</td>
<td>97-108</td>
</tr>
<tr>
<td>Business English</td>
<td>100</td>
</tr>
<tr>
<td>Business Mathematics</td>
<td>102</td>
</tr>
<tr>
<td>Business—Occupational Programs</td>
<td>54-57</td>
</tr>
<tr>
<td>Calendar, School</td>
<td>4-5</td>
</tr>
<tr>
<td>California State Colleges</td>
<td>78-79</td>
</tr>
<tr>
<td>Chemistry</td>
<td>108-109</td>
</tr>
<tr>
<td>Claremont Men's College</td>
<td>83</td>
</tr>
<tr>
<td>Classification of Students</td>
<td>29</td>
</tr>
<tr>
<td>Code of Conduct</td>
<td>31</td>
</tr>
<tr>
<td>Cooperative Office Training</td>
<td>107</td>
</tr>
<tr>
<td>Credit, Unit of</td>
<td>29</td>
</tr>
<tr>
<td>Data Processing</td>
<td>102</td>
</tr>
<tr>
<td>Dean's List</td>
<td>41</td>
</tr>
<tr>
<td>Dental Assisting</td>
<td>58, 109-111</td>
</tr>
<tr>
<td>Dentistry</td>
<td>68</td>
</tr>
<tr>
<td>Dismissal from Class</td>
<td>34</td>
</tr>
<tr>
<td>Disqualification</td>
<td>33</td>
</tr>
<tr>
<td>Drafting</td>
<td>111-113</td>
</tr>
<tr>
<td>Drama</td>
<td>113-114</td>
</tr>
<tr>
<td>Dropping Courses</td>
<td>30</td>
</tr>
<tr>
<td>Economics</td>
<td>114</td>
</tr>
<tr>
<td>Education</td>
<td>69, 115</td>
</tr>
<tr>
<td>Electricity</td>
<td>115</td>
</tr>
<tr>
<td>Electronics</td>
<td>59, 115-117</td>
</tr>
<tr>
<td>Eligibility, Student Body Office</td>
<td>37</td>
</tr>
<tr>
<td>Employment Aid</td>
<td>48</td>
</tr>
<tr>
<td>Engineering</td>
<td>69-70, 118-119</td>
</tr>
<tr>
<td>Engineering Aide</td>
<td>59-60</td>
</tr>
<tr>
<td>English</td>
<td>119-121</td>
</tr>
<tr>
<td>Enrollment Procedures</td>
<td>24</td>
</tr>
<tr>
<td>Evening Classes</td>
<td>18</td>
</tr>
<tr>
<td>Examinations, Final</td>
<td>31</td>
</tr>
<tr>
<td>Expenses, Student</td>
<td>25</td>
</tr>
<tr>
<td>Faculty</td>
<td>8-15</td>
</tr>
<tr>
<td>Filing</td>
<td>100</td>
</tr>
<tr>
<td>Financial Assistance</td>
<td>45</td>
</tr>
<tr>
<td>First Aid</td>
<td>142</td>
</tr>
<tr>
<td>French</td>
<td>122</td>
</tr>
<tr>
<td>Functions of the College</td>
<td>18</td>
</tr>
<tr>
<td>General Business</td>
<td>100-102</td>
</tr>
<tr>
<td>Geography</td>
<td>122</td>
</tr>
<tr>
<td>Geology</td>
<td>122</td>
</tr>
<tr>
<td>German</td>
<td>123</td>
</tr>
<tr>
<td>Grade Point Average</td>
<td>32</td>
</tr>
<tr>
<td>Grades of Scholarship</td>
<td>32</td>
</tr>
<tr>
<td>Graduation Requirements</td>
<td>27-29</td>
</tr>
<tr>
<td>Guidance</td>
<td>26</td>
</tr>
<tr>
<td>Health Center</td>
<td>40</td>
</tr>
<tr>
<td>High School Graduation</td>
<td>29</td>
</tr>
<tr>
<td>History Courses</td>
<td>123-124</td>
</tr>
<tr>
<td>History of Chaffey College</td>
<td>17</td>
</tr>
<tr>
<td>Home Economics</td>
<td>60, 70, 124-126</td>
</tr>
<tr>
<td>Honors and Awards</td>
<td>41-44</td>
</tr>
<tr>
<td>Honor Society,</td>
<td></td>
</tr>
<tr>
<td>Alpha Gamma Sigma</td>
<td>41</td>
</tr>
<tr>
<td>Housing</td>
<td>40</td>
</tr>
<tr>
<td>Hydraulics</td>
<td>126</td>
</tr>
<tr>
<td>Hygiene</td>
<td>126</td>
</tr>
<tr>
<td>Introduction to Investments</td>
<td>101</td>
</tr>
<tr>
<td>Index</td>
<td>157-159</td>
</tr>
<tr>
<td>Insurance</td>
<td>38</td>
</tr>
<tr>
<td>Journalism</td>
<td>61, 71, 127</td>
</tr>
<tr>
<td>Late Registration</td>
<td>29</td>
</tr>
<tr>
<td>La Verne College</td>
<td>84</td>
</tr>
<tr>
<td>Law</td>
<td>71</td>
</tr>
</tbody>
</table>