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Chaffey College Calendar 1967-1968

SUMMER SESSION 1967

Classes meet Monday through Thursday.

| June 14 | Registration for summer session closes |
| June 19 | SUMMER SESSION CLASSES BEGIN |
| June 21 | Last day to add classes |
| July 4  | Holiday — Independence Day |
| July 6  | Last day to drop courses without receiving an F grade |
| July 19 | Last day to withdraw from college without receiving an F grade |
| August 2-3 | Final examinations |
| August 3 | End of regular summer session |

FALL SEMESTER 1967

<p>| September 5 | Registration closes for both day and evening classes |
| September 8 | New student orientation, 8-10 a.m. |
| September 11 | CLASSES BEGIN |
| September 15 | Last day to add classes |
| October 27  | Last day to drop a semester class without receiving an F grade |
| November 6  | Midterm examinations begin |
| November 13 | Half-semester classes begin |
| November 16 | Notices of unsatisfactory work issued |
| November 23-24 | Thanksgiving vacation |</p>
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**SPRING SEMESTER 1968**

- **December 18**: Christmas vacation begins
- **January 2**: Classes resume
- **January 5**: Last day to withdraw from college without receiving an F grade
- **January 22**: Final examinations begin
- **January 30-February 2**: Grading and teacher-student conference period
- **February 2**: Spring semester begins

**January 30**: Registration closes for both day and evening classes

**February 5**: CLASSES BEGIN

**February 9**: Last day to add classes

**February 12**: Holiday — Lincoln’s Birthday

**February 22**: Holiday — Washington’s Birthday

**March 17-23**: Founders’ Week

**March 29**: Last day to drop a semester class without receiving an F grade

**April 1**: Midterm examinations begin

**April 8-12**: Spring vacation

**April 18**: Notices of unsatisfactory work issued

**April 16**: Half-semester classes begin

**May 24**: Last day to withdraw from college without receiving an F grade

**May 30**: Holiday — Memorial Day

**June 5**: Final examinations begin

**June 9**: Baccalaureate Service

**June 12**: Semester closes

**June 14**: 51st annual commencement
BOARD OF TRUSTEES

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1966 - 1967

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MERLE K. COX ................................................................ Secretary
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Community Service Officer ......................................... James Blackburn
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B.S., M.Ed, University of Missouri

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M.A., California State College at Long Beach

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FACULTY

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B.S., Trenton State Teachers College; A.M., Teachers College, Columbia University Vocal Music

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University of California at Los Angeles Dental Assisting

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A.B., University of California at Berkeley Biological Science

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B.S., San Francisco College for Women; R.N., Presentation School of Nursing, Sioux Falls, South Dakota Nursing

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B.A., Upland College Assistant Librarian

BOWMAN, BRUCE B ........................................... Assistant Professor
B.A., Whitman College Political Science

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

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

CALHOUN, KENNETH G ........................................... Assistant Professor
B.A., University of California at Riverside; M.S., University of the Philippines Biology, Hygiene

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

CLEMENTS, RICHARD J ........................................... Assistant Professor
B.A., M.A., California State College at San Francisco English

COLBATH, GEORGE C ........................................... Associate Professor
B.A., Pomona College; M.A., Claremont Graduate School Physical Education

CONTINO, SAM ........................................... Assistant Professor
Greer College, Chicago; Institute at Sun Electric Corp.; United Delco; University of California at Los Angeles Automotive Technology

CORNEJO, FELIPE N ........................................... Assistant Professor
Licenciado en Filosofía y Letras, University of Córdoba, Argentina; Licentia Theologiae, Gregorian University, Rome Spanish

CROW, NANCY H. (Mrs.) ......................... Assistant Professor
B.S., California State College at Los Angeles Nursing

DAVIS, BETTY J. (Mrs.) ......................... Assistant Professor
B.S., University of Southern California Business

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

DAWSON, KATHERINE (Mrs.) ...................... Associate Professor
R.N., St. John's Hospital School of Nursing, Springfield, Mo.; B.S., California State College at Los Angeles Nursing

DES LAURIERS, JAMES R ...................... Assistant Professor
B.A., M.A., California State College at Fullerton Biology, Zoology
DICKEY, MARLIN L ..................................................... Assistant Professor
B.S., University of Redlands; M.S., University of Wyoming  Geology

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

FELSCH, FRED O ..................................................... Professor
Wright-Aeronautics; University of  Aeronautics, Student Adviser
California at Los Angeles

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

FINNIE, THOMAS S ..................................................... Assistant Professor
A.A., Chaffey College; Curtiss Wright Technical  Electronics
Institute; University of California at Los Angeles

FISK, MARGARET (Mrs.) .............................................. Assistant Professor
B.A., M.A., University of California at Berkeley  Political Science

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

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

FRIEL, JOYCE B. (Mrs.) .............................................. Associate Professor
B.E., Los Angeles State College  Medical Secretary, Hygiene

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

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

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

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

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

GLENN, ELMER F ..................................................... Professor
B.S., United States Naval Academy  Mathematics
Graduate School

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

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

GRIMM, LEWIS L ..................................................... Professor
B.S., California Institute of Technology;  Physics, Engineering,
M.A., Claremont Graduate School  Mathematics, Physical Education

GRISE, HENDRIK ..................................................... Associate Professor
Art Institute of Chicago, Dallas Museum of Fine Arts  Art

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

HAFIZ, M. DAVID ......................................................... Assistant Professor
B.A., San Diego State College; M.A., California Counseling
State College at Los Angeles

HAMPTON, B. DRUE, JR. ................................................ Assistant Professor
B.B.A., University of Texas; M.B.A., East Texas Business
State College

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

HEMENWAY, FRANCIS P ............................................. Associate Professor
B.A., Santa Barbara State College Home Economics

HICKS, CHARLES W ..................................................... Assistant Professor
B.A., Occidental College English, Physical Education

HIGBEE, R. EUGENE .................................................. Assistant Professor
B.A., Brigham Young University Spanish

HINRICHSEN, KENNETH C ........................................... Professor
B.A., M.A., University of California Administrative Assistant
at Berkeley to the President

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

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

IANTORNO, JOSEPH B .................................................. Assistant Professor
B.A., M.A., Long Beach State College Assistant Dean of
Student Activities

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

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

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

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

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

KETCHUM, DONALD J ................................................ Professor
B.S., University of California at Los Angeles Data Processing

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

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

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

LOWDER, HOWARD W .................................................. Assistant Professor
B.S., California State Polytechnic College at Pomona Physical Education

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

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

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

MATHESON, DOUGLAS W ........................................... Assistant Professor
B.A., Whitman College; M.A., Claremont Graduate School Psychology

MAXWELL, MAXINE M ............................................ Associate Professor
B.S., Slippery Rock State Teachers College, Physical Education
Pennsylvania; M.A., California State College at Los Angeles

McALLISTER, BERNICE L. (Mrs.) ...................... Assistant Professor
A.B., Scripps College; M.A., Stanford Psychology, Sociology
University

MILLER, CHARLES S. .......................................................... Professor
B.A., Princeton University; M.A., Claremont History Graduate School

MYERS, EDWARD E. ...................................................... Associate Professor
B.A., Adelphi College; M.A., Los Angeles State College Physiology, Biology,
Anthropology

NASH, SHIRLEY (Mrs.) .............................................. Associate Professor
B.A., M.A., Whittier College Home Economics, Art

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

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

NORMAND, THOMAS J .................................................. Assistant Professor
B.A., California State College at Los Angeles Counseling, Business

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

O’SULLIVAN, R. TIMOTHY ............................................. Assistant Professor
B.A., St. John’s University; A.M., Columbia University English

PANZER, EDWARD J .................................................... Assistant Professor
A.B., Occidental College; M.A., Claremont Psychology Graduate School

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

PAYNE, JEAN (Mrs.) ..................................................... Assistant Professor
B.S., Howard College; M.A., Stanford Counseling, Business University

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

PERSONIUS, DARWIN N ............................................. Associate Professor
University of the State of New York; University of Aeronautics
California at Los Angeles; Claremont Graduate School

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

PITTS, BILLIE P. (Mrs.) .............................................. Associate Professor
B.S., Northeastern State College, Oklahoma; Business
M.S., Oklahoma State University
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Degree(s)</th>
<th>Institution(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>POMPURA, SYLVIA A. (Mrs.)</td>
<td>Associate Professor</td>
<td>B.S., Marquette University; R.N., Mt. Sinai</td>
<td>University at Los Angeles, Lithography</td>
</tr>
<tr>
<td>REYNOLDS, JOSEPH E.</td>
<td>Associate Professor</td>
<td>B.S., United States Military Academy; M.A.,</td>
<td>Middlebury College</td>
</tr>
<tr>
<td>RICHARDSON, WILLIAM</td>
<td>Assistant Professor</td>
<td>B.A., M.A., College of the Pacific</td>
<td>Business, Physical Education</td>
</tr>
<tr>
<td>ROBARTS, MYRON</td>
<td>Assistant Professor</td>
<td>A.B., Los Angeles State College</td>
<td>English</td>
</tr>
<tr>
<td>ROBINSON, MARY V.</td>
<td>Associate Professor</td>
<td>B.A., University of Iowa; M.Ed., University of California at Los Angeles</td>
<td>Business</td>
</tr>
<tr>
<td>ROBINSON, W. DARIO</td>
<td>Associate Professor</td>
<td>University of California at Los Angeles; San Francisco State College</td>
<td>Lithography</td>
</tr>
<tr>
<td>ROLPH, ROBERT W.</td>
<td>Assistant Professor</td>
<td>B.A., University of California at Berkeley;</td>
<td>Data Processing</td>
</tr>
<tr>
<td>ROSE, BEA</td>
<td>Professor</td>
<td>B.A., San Francisco State College; M.A., San Francisco Theological Seminary</td>
<td>Philosophy</td>
</tr>
<tr>
<td>ROSE, FLORENCE (Mrs.)</td>
<td>Assistant Professor</td>
<td>B.A., University of California at Berkeley;</td>
<td>Psychology, Sociology</td>
</tr>
<tr>
<td>SAYLES, CAROL L.</td>
<td>Assistant Professor</td>
<td>B.S., Ohio State University; M.A., Temple University</td>
<td>Speech, Forensics</td>
</tr>
<tr>
<td>SCHESSER, ROBERT D.</td>
<td>Assistant Professor</td>
<td>A.B., M.A., Colorado State College</td>
<td>Business</td>
</tr>
<tr>
<td>SCHINDLER, RUTH H. (Mrs.)</td>
<td>Associate Professor</td>
<td>A.B., Whittier College; R.N., San Bernardino Valley</td>
<td>Nursing</td>
</tr>
<tr>
<td>SEYMOUR, JOHN A.</td>
<td>Assistant Professor</td>
<td>B.S., M.A., Arizona State College</td>
<td>History</td>
</tr>
<tr>
<td>SHANNON, Joyce Holly (Mrs.)</td>
<td>Associate Professor</td>
<td>B.A., University of California at Los Angeles</td>
<td>Music</td>
</tr>
<tr>
<td>SHANNON, FLOYD E.</td>
<td>Associate Professor</td>
<td>B.A., Fresno State College</td>
<td>Drafting, Engineering</td>
</tr>
<tr>
<td>SHARP, DAWN (Mrs.)</td>
<td>Assistant Professor</td>
<td>B.A., M.A., University of California at Riverside</td>
<td>History</td>
</tr>
<tr>
<td>SIMMONS, C. RAY</td>
<td>Assistant Professor</td>
<td>B.S.E.E., Oklahoma A. and M. College</td>
<td>Electronics</td>
</tr>
<tr>
<td>SLOTKIN, MARGARET (Mrs.)</td>
<td>Associate Professor</td>
<td>R.N., Edward J. Meyer Memorial Hospital;</td>
<td>Hygiene</td>
</tr>
<tr>
<td>SMITH, MILLICENT ANNE</td>
<td>Associate Professor</td>
<td>B.A., M.A., Peabody College, Nashville, Tennessee</td>
<td>Business</td>
</tr>
<tr>
<td>SMITH, PAUL V.</td>
<td>Associate Professor</td>
<td>B.A., M.A., New Mexico Highlands</td>
<td>Hygiene, Physical Education, University</td>
</tr>
</tbody>
</table>
SMITH, ROBERT E ....................................................... Associate Professor
B.A., Pomona College; M.A., Claremont Graduate School  Art

STANDLEA, LESLIE H .................................................. Professor
B.S., University of California at Berkeley; M.S., University of Southern California

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

STARR, PHILIP C ...................................................... Assistant Professor
B.S., Harvard University; M.A., University of California at Los Angeles

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

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

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

THEURER, GAIL (Mrs.) ................................................ Assistant Professor
A.B., Stanford University English, German

THEURER, HOWARD W ............................................. Assistant Professor
B.S., University of California Counseling, Physical Education at Los Angeles

TOLSTOY, PETER .......................................................... Associate Professor
B.S., M.A., California State Polytechnic College at San Luis Obispo Counseling, Hygiene

WALDROP, MARY L. (Mrs.) ........................................... Associate Professor
A.B., University of California at Berkeley; M.A., Claremont Graduate School
M.A., New York University Home Economics Psychology

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

WALKER, SUE .............................................................. Assistant Professor
B.A., Pomona College; M.A., Claremont Graduate School Counseling, Psychology

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

WALLACE, EDGAR H. ...................................................... Assistant Professor
B.A., Miami University, Ohio; M.S., Cornell University Psychology, Supervision

WALTMIRE, SAMUEL ................................................ Assistant Professor
B.A., M.A., Whittier College Astronomy, Mathematics

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

WATERS, BOBBIE L ...................................................... Assistant Professor
B.A., California State College at Los Angeles Business

WEBB, RAY O .............................................................. Professor
B.Ed., Illinois State Normal University; M.A., University of Southern California Drafting, Engineering
PART-TIME FACULTY

ALLEN, HUFFORD ..............................................Supervision
A.B., New York University

ANDERSON, A. GARY ..........................................Real Estate
B.S., University of Southern California

ANDERSON, KENNETH H. .....................................Mathematics
B.S., M.S., Brigham Young University;
Ph.D., University of Southern California

ATLEE, GARY .....................................................Data Processing
B.A., University of Redlands

BASSHAM, PHILIP .............................................Supervision
B.S.E.E., California State College at Long Beach

BEMIS, BRUCE ...................................................Electricity
B.S., Oregon State University

BENKENDORF, RAY ............................................Speech
B.A., Northern State College, South Dakota

BERGESON, THEODORE .......................................Art
B.A., University of California at Los Angeles;
M.S., California State College at Los Angeles

BLUMENTHAL, ROBERT A. .................................Business
B.A., University of California at Los Angeles

BRIDGES, FRED ..................................................English
B.A., La Verne College; M.A., Claremont Graduate School

BROWNSON, JEROME .........................................Supervision
A.B., M.A., University of Arizona

CAMPER, JOHN ..................................................Sociology
B.S., Savannah State College; M.A., New York University

CHAMLEE, FLOYD .............................................Correctional Science
A.B., University of California at Riverside

CLARK, CHARLES ...............................................Fire Science
Yuba College, Chaffey College

COOK, ALLEN W. ..............................................Mathematics
B.S., M.A., California State Polytechnic College at San Luis
Obispo; Ed.M., Harvard University

CROWLEY, LARRY .............................................Business
B.S., Brigham Young University

CUSTER, RICHARD ............................................Fire Science
University of Southern California; Mt. San Antonio College;
Chaffey College
PART-TIME FACULTY

DAVIDSON, ROSEMARY ................................................................. Speech
  B.A., George Washington University

DORAN, ROBERT ................................................................. Sociology
  B.A., Arizona State University; B.F.T., American
  Institute of Foreign Trade

EQUITZ, DALE ................................................................. Police Science
  University of Southern California; Fullerton Junior College;
  Mt. San Antonio College

ETCHASON, WILLIAM D ......................................................... Real Estate
  B.S., Pepperdine College; LL.B., University of Southern
  California

EWING, ROBERT ................................................................. Business
  B.S., University of California at Berkeley; M.S., University
  of Southern California

EXTALLE, GILBERT ................................................................. Business
  A.B., California State College at San Jose

FIMPEL, RICHARD ................................................................. Food Service
  San Bernardino Valley College; Stockton Junior College;
  Chaffey College; University of California at Berkeley, Los
  Angeles and Riverside

FLORES, ROBERT ................................................................. Spanish
  B.A., California State College at Sacramento; M.A.,
  Michigan State University

GALBREATH, JAMES ................................................................. Police Science
  Chaffey College; University of Southern California

GEARY, RONALD G ................................................................. English
  B.A., University of Washington

GREEN, FRANKLIN D ............................................................. Electronics
  B.A., M.S., University of Utah

GUILLEN, HENRY ................................................................. Business
  B.A., California State College at San Diego

GUTHRIE, VIRGINIA ................................................................. Supervision
  University of Arkansas; Mount San Antonio College

HARTZELL, HAROLD A ............................................................. Business
  B.A., Arkansas State Teachers College; M.A., California
  State College at Los Angeles

HEIM, RICHARD ................................................................. Psychology
  B.A., M.A., Stanford University; Ph.D., Claremont
  Graduate School

HOLDAWAY, RICHARD ............................................................. Supervision
  B.S., University of Utah

HOWARD, OLIVA I. (Mrs.) .............................................................. Business
  B.A., Washington State University

HOWARTH, JOHN ................................................................. English
  B.A., University of Michigan; M.Ed., University of California
  at Los Angeles

JACKSON, CARL ................................................................. Police Science
  Pomona Police Training Center; American School of
  Technical Intelligence

JOHNSON, OSCAR ................................................................. Business
  B.B.A., Woodbury College; LL.B., Southwestern
  University, Texas

JONES, JERRY ................................................................. Fire Science
  A.A., San Bernardino Valley College

KNOWLES, ROBERT ............................................................... Sociology
  B.A., Pepperdine College; M.S., Columbia University

KOehler, charles A ................................................................. Political Science
  A.B., Hillsdale College; M.P.A., University of Michigan;
  M.A., Northern Michigan College
PART-TIME FACULTY

KOLBRECK, LEROY ................................................................. Police Science
                           Pasadena City College
KRAMER, BERNARDUS J. M. .................................................. Political Science
                           B.A., M.A., University of Texas
LOWE, ROBERT C. ................................................................. Police Science
                           Ohio State University; University of Southern California; Montclair Police Department
LYNCH, ALLEN T. ................................................................. Philosophy
                           B.A., M.A., Gonzaga University
MASON, JAMES ................................................................. Supervision
                           B.A., University of Redlands; M.S.W., University of California at Los Angeles
McDONNELL, JOHN ............................................................. Supervision
                           B.S., Bowling Green State University, Ohio; M.B.E., Claremont Graduate School
MERCURIO, RICHARD ......................................................... Police Science
                           California State College at Los Angeles; Mt. San Antonio College
MIERAS, JAMES E. ............................................................... Real Estate
                           B.A., Occidental College
MILLIKEN, CHARLES ........................................................... Police Science
                           B.A., California State College at Los Angeles
MITCHELL, EUGENE D. ......................................................... Business
                           B.A., M.A., University of Southern California
MOSES, RICHARD .................................................................. Welding
                           B.A., California State College at Long Beach
MURRAY, JOHN ................................................................. Metallurgy
                           B.S., University of California at Los Angeles
NOVAK, MARTHA ..................................................................... Music
                           Bachelor of Music, University of Louisville; Master of Music, Yale University
OLDS, ROBERT ........................................................................ Lithography
                           California State College at Los Angeles; Mt. San Antonio College
PAYNE, JACK ................................................................. Correctional Science
                           A.B., California State College at Sacramento
PERRY, WILLIAM ................................................................. Correctional Science
                           B.A., University of California at Los Angeles; M.P.A., University of Southern California
PITTS, WALLACE W. ............................................................ Speech
                           A.B., Northeastern State College, Tahlequah, Oklahoma; M.S., Oklahoma State University
POMEROY, JOSEPH A., JR. ....................................................... Spanish
                           B.A., M.A., University of California at Los Angeles; Certificado, University of Madrid
POWELL, ALICE ..................................................................... Food Service
                           University of California Extension
PRICE, STANLEY ................................................................. English
                           B.A., La Verne College; M.A., California State College at Los Angeles
RANDS, DONALD E. ............................................................. Physics
                           B.A., B.S., Lewis and Clark College; M.S., University of Oregon
REARDON, WALTER .......................................................... Accounting
                           B.S., University of California at Los Angeles
RICHLAN, FREDERICK .......................................................... Geography
                           B.S., Brigham Young University; M.S., University of Utah
RICKEY, ROBERT .................................................................. Aeronautics
                           B.S.E.E., University of Kansas
PART-TIME FACULTY

ROBISON, RICHARD  ................................................................. Mathematics
B.A., La Verne College

RUST, JAMES ........................................................................................................... Supervision
B.S., Wheaton College; M.A., University of Chicago

SAGOUSPE, ROGER H. ................................................................. Police Science
A.A., Chaffey College; University of Southern California; Ontario Police Department

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

SCHER, DAN ............................................................................................... Correctional Science
B.A., California State College at Santa Barbara; M.A., Claremont Graduate School

SCHESSER, FRANKIE ................................................................. Business
A.B., M.A., Colorado State College

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

SELLERS, HERBERT .................................................................................. Electricity
B.S., M.S., West Coast University

SFAHER, JESSE .................................................................................. Electronics
Chaffey College

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

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

SMITH, BILL J. .................................................................................. Fire Science
Chaffey College

SMITH, JOSEPH H. .................................................................................. English
B.A., M.A., Drake University

SPLATT, FRANK................................................................................................ Escrow Procedures
University of California Extension

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

THOMAS, LAURIANE .................................................................................. Supervision
B.S., California State College at Los Angeles;
M.S., University of California at Los Angeles

TOLSTOY, ANDREE .................................................................................. Art
B.A., Scripps College; M.A., Claremont Graduate School

TUNE, ESTHER .......................................................................................... Medical Secretary
University of California Extension

VAN NESS, RICHARD .............................................................................. History
A.B., University of Redlands; M.A., Ph.D., University of Southern California

VELLIS, LEWIS J. .................................................................................. Drafting
B.A., University of California at Santa Barbara;
M.S. in Ed., University of Southern California

VOLLINTINE, CLAUDIA L. (Mrs.) ................................................................. Business
B.A., Whittier College; M.A., Claremont Graduate School

WAGNER, MARIAN .................................................................................. Business
A.A., Mt. San Antonio College

WALTERS, CELESTA .................................................................................. Business
B.S., University of Nebraska; M.S., University of Southern California

WELTON, WALTER .................................................................................. Data Processing
A.A., San Diego Junior College

WILSON, ENID H. (Mrs.) .......................................................................... Crafts for the Blind
B.A., Pomona College
FACULTY EMERITUS

BLAKESLEE, FLORENCE (Mrs.) ........................................................ Music
B.A., Pomona College

BLAKESLEE, S. EARLE ........................................................................ Music
Mus.B., University of Denver; B.A., Pomona College

BOOTH, CHARLES J ............................................................................ Director
B.S., M.S., University of California

CLARK, PEARL E ............................................................................ Dean of Students
B.A., M.A., University of Montana; Ph.D., University of Southern California

DYSART, RUSSELL D. ................................................................. Geology, Mineralogy
B.A., Pomona College; M.A., University of Southern California

FLORY, VERA E. (Mrs.) ................................................................. English
A.B., M.A., Northwestern University

FRANK, MARIE G. (Mrs.) ............................................................. Home Economics
Chouinard Art Institute, Los Angeles; University of California at Los Angeles; University of Southern California

GATIGNOL, GILBERTE F ............................................................... French
B.A., New Mexico Normal University; Diplôme de Professeur de Français à l'Etranger, University of Paris; M.A., University of California

HILL, MERTON E ............................................................................ Superintendent
B.S., Pomona College; M.A., Claremont Colleges; Ed.D., University of California

HORSCH, L. J. ............................................................................. Social Science
B.A., Bethel College, Newton, Kansas; M.A., Pomona College

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

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

LUEBBERS, EMMA O. (Mrs.) ......................................................... Business
B.S., Maryville State Teachers College; M.A., University of Southern California

MATHER, WILEY W ....................................................................... Social Science
B.A., Pomona College; M.A., Claremont Colleges

MERCHANT, FRANK ....................................................................... Chemistry
B.A., M.A., Pomona College

MILLER, RALPH H ..................................................................... Life Science
B.A., San Diego State College; M.A., Claremont College

MILLIKEN, DANIEL B .................................................................. President
B.A., Pomona College; M.A., Harvard University; Ph.D., Claremont Graduate School

NORMAN, ROSAMOND ................................................................ English
B.A., Pomona College; M.A., Stanford University

PALMER, FRANK .......................................................................... English
B.A., Pomona College

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 at Berkeley
FACULTY EMERITUS

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 at Berkeley
WITHEY, HETTIE ................................................................. Social Science
  B.A., M.A., Stanford University

Three retired presidents and their secretary
HISTORY

Chaffey College is the culmination of eighty-four 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 five operating high schools, Alta Loma, Chaffey, Montclair, Ontario 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.

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.
FACILITIES

LIBRARY

The College Library is open from 7:30 a.m. until 4:30 p.m. and 6:30 p.m. until 10:00 p.m. Monday through Thursday, and from 7:30 a.m. until 4:30 p.m. on Friday. The main reading room seats 150 at individual study carrels and library tables. Opening off the reading room is a large conference room used for group study and orientation classes in library usage, a typing room for student use equipped with six typewriters, and the staff reading room. The library's collection of 40,000 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 and the library workroom.

The reserve book collection and the periodical collection of over 400 different periodicals currently received by the library are housed on the mezzanine. Also available for student use on this level are microfilm readers, a photo-copying service 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 houses the Office of Student Personnel, 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 "verifica-tion of illness" report with the Health Center within 5 days after returning to school.

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, a 4200-seat stadium with football field and track, the baseball field, playing courts, and a field for women's physical education and athletic activities.
DIVISIONS OF THE COLLEGE

BUSINESS EDUCATION - - LOUIS J. GENTILE, Chairman
Accounting
Business Administration
Business English
Data Processing
General Business
Home Furnishings
Legal Secretary
Medical Secretary
Merchandising
Office Clerical
Real Estate
Secretarial Science
Statistics

CREATIVE ARTS - - - JESSE H. WEAVER, JR., Chairman
Art
Drama
Home Economics
Music
Speech

INDUSTRIAL-TECHNICAL - - FRED O. FELsch, Chairman
Aeronautics
Automotive Technology
Correctional Science
Electricity
Electronics
Fire Science
Food Service
Hydraulics
Lithography
Police Science
Supervision
Welding

LANGUAGE ARTS - - - MICHAEL E. MALONE, Chairman
English
French
German
Journalism
Spanish

LIBRARY - - - GEORGE ELsER, Chairman
Library Science
DIVISIONS

LIFE SCIENCE: Richard M. Beeks, Chairman
Anatomy
Biology
Botany
Dental Assisting
Hygiene
Microbiology
Physiology
Professional Nursing
Vocational Nursing
Zoology

PHYSICAL EDUCATION: John F. Burnison, Chairman
Archery
Badminton
Basketball
Body Building
First Aid
General Activities
Gymnastics
Handball
Life Saving
Modern Dancing
Social Dancing
Square and Country Dancing
Swimming
Tennis
Trampoline
Wrestling

PHYSICAL SCIENCE: Arthur E. Flum, Chairman
Astronomy
Chemistry
Drafting
Engineering
Geology
Mathematics
Physics

SOCIAL SCIENCE: Robert Latham, Chairman
Anthropology
Economics
Education
Geography
History
Philosophy
Political Science
Psychology
Sociology
Procedures
ADMISSION REQUIREMENTS

Admission Requirements and Procedures

I. ADMISSION AND REGISTRATION
All inquiries and applications concerning admission should be sent to the Office of Admissions and Records, Chaffey College, 5885 Haven Avenue, Alta Loma, California 91701.

A. APPLICATION REQUIREMENT:
Every new student and every student who has attended Chaffey College but has been out a semester or more must file an Application for Admission. Applications may be obtained from the Office of Admissions and Records. Completed applications must be returned to that office before students are permitted to register.

B. RESIDENCE REQUIREMENTS:
A student must be a legal resident of the Chaffey Union Junior College District or of an area in California which is not a part of a junior college district. Students residing in another junior college district may be admitted only by securing a release from the district of residence. Students who are legal residents of a state other than California or of a foreign country are subject to a nonresident tuition fee.

C. EDUCATIONAL REQUIREMENTS:
Any high-school graduate, or any adult eighteen years of age or over who shows evidence of being capable of profiting from college instruction, may be admitted to Chaffey College. Students who have had college work elsewhere are admitted if they have not been disqualified from another college and if they had grades which would not disqualify them at Chaffey College.

D. PROBATIONARY ADMISSION:
Students are admitted to Chaffey College on probation as follows:
1. First-time day students who have a high-school record of less than C average and who have achieved low scores on the ACT tests.
2. Non-high-school graduates.

E. EDUCATIONAL PLACEMENT PROGRAM:
Superior high-school seniors may be admitted to an advanced placement program at Chaffey College if the high-school principal and counselor recommend such a combination program.
F. Nonresident Tuition:
The California Education Code, Section 25505.8, provides that students who qualify as nonresidents shall be charged a tuition fee. Generally, nonresidents are those who live in states other than California or in foreign countries. A person who is living with his parents will be considered a resident if the parents have established residence in California at the time the student is registered. The tuition fee will be $11.00 per unit, with a maximum of $165.00 per semester. The tuition fee is due and payable prior to completion of registration.

G. Student Body Membership:
The regular student body membership dues are set at $18.00 per year (or $3.00 per year for those who are carrying fewer than 10 units, or are over 25 years of age, or are taking only evening classes). The amount is customarily paid at the time of registration. The advantages of holding a Student Body Card are enumerated in this catalog in the section entitled "Student Activities."

H. Registration:
The closing dates for registration for the summer session and for each semester are shown in the calendar in the first part of this catalog.

ADMISSION PROCEDURES
A. Full-time students or students under 21 years of age taking 6 units or more are admitted to Chaffey College when they complete the following procedure before registering:

1. Take the American College Test (ACT) and request that results be sent to Chaffey College. Applications may be secured from your local high school or from Chaffey College. (Tests are not required of students who transfer 30 units or more from another college.)

2. Complete an Application for Admission obtained from Chaffey College Office of Admissions.

3. Have a transcript of record sent to Chaffey College Office of Admissions from last high school attended and from all colleges attended.

4. Purchase a student body card, or obtain a clearance for same, and file polio immunization form (if required).

B. Part-time students are admitted when they complete item 4 above before registering.
ADMISSION REQUIREMENTS

III. PLACEMENT TESTS

The American College Test is 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.

Information regarding the following test schedule may be secured from your local high school, Chaffey College, or by writing the American College Testing Program, P. O. Box 168, Iowa City, Iowa 52242.

A. SCHEDULE OF PLACEMENT TESTS FOR FALL SEMESTER 1967
   Saturday, February 18, 1967 — 8:30 a.m.
   Saturday, May 13, 1967 — 8:30 a.m.
   Saturday, August 5, 1967 — 8:30 a.m.

B. SCHEDULE OF PLACEMENT TESTS FOR SPRING SEMESTER 1968
   Saturday, October 21, 1967 — 8:30 a.m.
   Saturday, December 9, 1967 — 8:30 a.m.

All of these tests are given on the Chaffey College campus, and most are also given at various locations throughout the United States on the dates indicated.

*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 1966 figures)

Incidental Expenses
Cost per year Minimum Moderate Liberal
Books* .......................................... $60.00 $ 85.00 $120.00
Supplies‡ ...................................... 20.00 30.00 40.00
Student Body Card ...................... 18.00 18.00 18.00
Student Activities ...................... --- 20.00 30.00
Total ...................................... $ 96.00 $151.00 $206.00

*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, Electronics, Nursing, Dental Assisting, and Automotive Technology.

Out of state tuition — See part F of Admission and Registration.

Living Accommodations
Cost per month Minimum Moderate Liberal
Room only .................................... $30.00 $ 40.00 $ 50.00
Room with kitchen privileges .... 40.00 45.00 55.00
Room and board (2 meals per weekday) 70.00 80.00 90.00

Chaffey College maintains a file of available housing in the Office of Student Activities in the Campus Center.

Transportation
Cost per month Minimum Moderate Liberal
— $ 25.00 $ 40.00

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
Cost per month Minimum Moderate Liberal
$15.00 $ 25.00 $ 35.00

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.

Minimum Moderate Liberal
Students living at home .................. $150.00 $ 225.00 $350.00
Students living away from home .... 750.00 1,100.00 1,800.00
Out of state students ................. 900.00 1,325.00 2,100.00

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Guidance and Counseling

Guidance and counseling is available to all regular and part-time students through trained counselors. Each full-time 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, designed 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 15 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 Dean 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.
GRADUATION REQUIREMENTS

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.

HONORS PROGRAM — A number of divisions have developed special project courses for the most capable students. Students who have proven themselves after one semester of course work and meet the requirements of the department are eligible for these special projects, which are found under biology, chemistry, electronics, French, Spanish, and social science.

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. The Associate in Science degree is awarded to those graduates who have a major in one of the following fields: engineering, physical and biological science, vocational-technical curricula. All others are awarded the Associate in Arts degree.

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. Transfer: Political Science 1a and Political Science 3, or History 17a, 17b, or History 8a, 8b, or any combination of the above
   B. Non-Transfer: History 57 and Political Science 57
   English and Speech ..................................................... 6 units
   *A major of at least ................................................... 20 units
   Total needed for graduation ............................................. 60 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 54 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:

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MAJORS

I. GENERAL EDUCATION MAJOR:
At least 6 units in each of three fields (from the following areas: Business Education, Social Science, Language Arts, Creative Arts, Physical Science, Life Science, Industrial Technical, and Physical Education) to form 20 units in addition to other courses required for graduation. In Business Education, at least 6 units must be selected from General Business 64, Accounting 1a, Business Administration 18a, or Business Administration 40.

II. COLLEGE TRANSFER:
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: 20 or more units in art courses as follows: Art 17a; 3 units from Art 1a or 1b; 3 units in Art 2 (Art 12ab by permission); Art 12c; 2 units from Art 3a, 3b, 24a; 3 units from Art 4a, 4b, 4c, 4d, 14a, 14b, 14c, 14d, plus 5 or more units from any of the following areas: art, drafting, lithography, merchandising, interior design, crafts or personality and dress.
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 or 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. Interior Design: Art 23, 25, 26, 27, 28, 29, plus 9 additional units in English, mathematics and speech.
12. Journalism: 16 units including English 2a, 2b, 2c, 2d, plus 9 additional units in Journalism 57a, 57b, 57c, 57d, and/or speech.
13. 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.
14. Life Science: 14 or more units of life science plus not more than 6 units in physics, chemistry or mathematics.
15. Lithography: 18 or more units of lithography plus 3 units in English and typing competency.
16. Mathematics: 20 units in mathematics and physical science. Must include at least 12 units in mathematics.
17. 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.
18. Physical Science: 20 units in physical science and mathematics. Must include at least 12 units of physical science.
19. Police Science: 17 or more units in police science plus 3 units from Psychology 1a, Sociology 1a or 1b or 2.
20. Professional Nursing: 37 units of nursing from courses 1-6.
21. Social Science: 20 units of social science including two one-year courses.
22. Supervision: 20 units from the courses in supervision including Supervision 51, 55, Psychology 52, 53, and English 61.
23. 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.

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 11½ units or fewer
Adult — a person 21 years or older and enrolled in fewer than 10 class hours per week.
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.

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.

COLLEGE REGULATIONS

COMPLIANCE WITH COLLEGE REGULATIONS AND NOTICES — Students are responsible for compliance with the regulations published in this catalog, and with the official notices published in the College newspaper The Collegiate Press, The Panther Bulletin, or posted on official bulletin boards.

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

AUDITING CLASSES — No auditors are permitted.
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.

A student who has been dropped for non-attendance may still drop officially if the action is undertaken within the semester in which the drop occurs.
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. When a course is repeated, no units are earned. However, the grade and the grade points earned will be recorded. Both the original course and the repeated course counts 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 examinations 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 excuse a student from attending the scheduled 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.
GRADES AND GRADE POINTS

A — Excellent 4 grade points for each unit
B — Good 3 grade points for each unit
C — Average 2 grade points for each unit
D — Passing 1 grade point for each unit
F — Failed 0 grade points for each unit

Grade points are generated by the final grades received in the course. The C grade is considered the minimum grade for graduation and for transfer to other institutions. If a C average is not maintained at Chaffey College, probation or disqualification may occur.

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>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></td>
<td></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 minimum requirements or they will be disqualified. The conditions under which students are placed on and removed from probation are listed below.

1. PLACEMENT ON SCHOLASTIC PROBATION
   (a) Entering students are 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) Full-time students whose semester grade-point average is below 2.0 at the end of any semester, or whose cumulative grade-point average is less than 2.0, are placed on probation. (The WF grades are counted as F grades in computing grade-point average.)
   (c) Part-time students whose cumulative grade-point average is below 2.0 are placed on probation. (This includes only students who have attempted a total of 12 or more college credits at Chaffey or any other college.)
   (d) Students who have received WU grades in 50% or more of the units for which they enrolled are placed on probation.
   (e) Students who enter after being out of school for a semester or more following disqualification are placed on probation.
2. REMOVAL FROM SCHOLASTIC PROBATION

A student is removed from scholastic probation as soon as he has achieved an overall grade-point average of 2.0 or better.

3. 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 at other than designated places, bringing liquor on campus or to campus activities, or for other behavior detrimental to the welfare of the college.

A student is removed from behavioral probation when he has completed his designated period of probation with entirely satisfactory behavior.

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 next semester when:

(a) he achieves less than a 1.75 grade-point average for units attempted in each of three consecutive semesters. (This is the state minimum prescribed by law.)

(b) his cumulative grade point average falls below a 2.0 by 20 grade points or more.

(c) he earns a second behavioral probation during a behavioral probation period.

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 conduct.
Student Activities
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:  
- President  
- Vice President  
- Secretary  
- Rally Chairman  
- Social Chairman

Appointive Officers:  
- Publicity Chairman  
- Athletic Chairman  
- Assembly Chairman  
- Corresponding Secretary  
- 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 $18.00 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.

Three-dollar Student Body cards ($2.00 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 —

$18.00 Cards (good for entire year)
Did not enter (must request refund by Sept. 15) ........................................ $16.00
Request for refund received before Nov. 1 .................................................. 12.00
November 1 to January 1 ............................................................................. 7.00
First month of second semester ................................................................ 4.00

$9.00 Cards (good for spring semester only)
Did not enter .......................................................................................... $ 7.00
Beginning of second semester to March 1 .................................................. 5.00
(The Argus yearbook is not included in second-semester ASB Cards.)

No refunds:
After March 1 on $18.00 cards
At any time on $3.00 or $2.00 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 thirty 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.

AWS Handbook — A handbook for women students prepared by Associated Women Students.
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 Assistant Dean 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, Campus Center.

STUDENT LOANS AND EMPLOYMENT — 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 in the Campus Center 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.

SCHOLARSHIP INFORMATION — Information regarding availability of and application procedures for scholarships to four-year colleges and universities may be obtained from the counselors. Chaffey College offers a number of scholarships to entering and continuing students. The Financial Aids Secretary in the Student Activities Office in the Campus Center will answer questions regarding these.
Honors

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.

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 42 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 A.G.S. Advisor.)
HONORS FINANCIAL ASSISTANCE

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.

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

Each year Chaffey College offers a variety of scholarships, which are made possible by community organizations, campus organizations, and perpetual funds deposited in the Chaffey Memorial Fund. Each year some $3500 is awarded to freshmen students who will continue for a second year at the college and to students graduating and transferring to a four-year college.

Complete information and application blanks may be obtained from the the Financial Aids Secretary in the Student Activities Office in the Campus Center. The deadline for submitting applications for these scholarships is usually May 1st.
FINANCIAL ASSISTANCE

EDUCATIONAL OPPORTUNITY GRANTS

Grants of $200 to $800 are available to students who qualify under the Higher Education Act of 1965. Students must prove financial need and maintain a high scholarship average in order to be considered for one of these grants.

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 in the Campus Center. A loan committee composed of faculty members considers each loan and approves or denies it on the basis of the student's needs, 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.

GOVERNMENT GUARANTEED LOANS — Chaffey College will assist students in applying for bank loans under the Government Guaranteed Loan Program.

PART-TIME EMPLOYMENT

The Financial Aids Secretary in the Student Activities Office in the Campus Center 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.

The college also participates in the College Work-Study program of the Higher Education Act of 1965. Students qualifying on the basis of need may work up to 15 hours a week on campus as gardening, secretarial, custodial, laboratory, or library assistants.

Students taking vocational courses are 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
- Automotive Technology
- Business Education
  - Accounting
  - Business Administration
  - Data Processing
  - Home Furnishing
  - Legal Secretary
  - Medical Secretary
  - Merchandising
  - Office Clerical
  - Real Estate
  - Secretarial
  - Correctional Science
  - Dental Assisting
  - Electronics
  - Engineering Aide
  - Chemical
  - Drafting
  - Surveying
  - Fire Science
  - Food Service
  - Home Economics
  - Industrial Management
  - Interior Design
  - Journalism
  - Lithography
  - Police Science
  - Professional Nurse
  - Quality Control
  - Supervision
  - Vocational Nurse
OCCUPATIONAL PROGRAMS

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)                      Aircraft Powerplant Mechanics ("E" License)

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aero 61a, 61b (Theory of Airplane Construction)</td>
<td>Aero 51a, 51b (Powerplant Theory)</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Aero 62a, 62b (Airplane Construction)</td>
<td>Aero 52a, 52b (Powerplant Shop)</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

Additional hours necessary to meet specified 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>3</td>
</tr>
<tr>
<td>English and Speech</td>
<td>6 or 7</td>
</tr>
<tr>
<td>a. English 1a or 60</td>
<td>a. Speech 1</td>
</tr>
<tr>
<td>b. Speech</td>
<td>3</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 Related 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 Related Basis.
OCCUPATIONAL PROGRAMS

AIRLINE STEWARDESS

Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business English 53a, 53b</td>
<td>6</td>
</tr>
<tr>
<td>Foreign language or elective</td>
<td>8</td>
</tr>
<tr>
<td>Home Economics 21 (Art in Dress)</td>
<td>2</td>
</tr>
<tr>
<td>Home Economics 10 (Nutrition)</td>
<td>2</td>
</tr>
<tr>
<td>U.S. History and/or Political Science</td>
<td>5 or 6</td>
</tr>
<tr>
<td>Speech 1</td>
<td>3</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
</tr>
<tr>
<td>P. E.</td>
<td>1</td>
</tr>
</tbody>
</table>

Sophomore Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology 1a</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 1a, 1b</td>
<td>6</td>
</tr>
<tr>
<td>Home Economics 55 (Modern Hostess)</td>
<td>1</td>
</tr>
<tr>
<td>Geography 1a</td>
<td>3</td>
</tr>
<tr>
<td>Secretarial Science 3a, 3b (Typewriting)</td>
<td>4</td>
</tr>
<tr>
<td>Secretarial Science 4a, 4b (Shorthand) or music, art, or foreign language</td>
<td>10</td>
</tr>
<tr>
<td>Physical Education 26 (First Aid)</td>
<td>2</td>
</tr>
<tr>
<td>P. E.</td>
<td>1</td>
</tr>
</tbody>
</table>

Personal Qualifications:
1. Citizen of the United States
2. At least 5'2" tall and not over 5'7"
3. 135 pounds or less proportionately
4. 21 years old and not yet reached 27
5. Rigid physical exam administered by airline
6. 20/30 vision each eye or better without glasses

Education:
1. Registered nurse
2. Two years of college
3. 1 year of college plus 1 year of business experience

NOTE: Women wishing flying experience may consider joining the Chaffey College Flying Club.

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:
OCCUPATIONAL PROGRAMS

Commercial Art — Recommended courses are:

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 2, 12c .................................... 4</td>
<td>Art 5a, 5b, 5c, 5d .......................... 4</td>
</tr>
<tr>
<td>Art 3a, 3b .................................... 2</td>
<td>Art 6a, 6b .................................. 2</td>
</tr>
</tbody>
</table>

Ceramic Design — Recommended courses are:

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 2, 12c .................................... 4</td>
<td>Art 57a, 57b ................................. 4</td>
</tr>
<tr>
<td>Art 3a, 3b .................................... 2</td>
<td>Art 58a, 58b ................................. 4</td>
</tr>
<tr>
<td>Art 17a, 17b, 17c ............................. 9</td>
<td>Art 17a, 17b, 17c ............................. 9</td>
</tr>
</tbody>
</table>

Interior Design — Recommended courses are:

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 23 ........................................ 3</td>
<td>Art 3a, 3b .................................. 2</td>
</tr>
<tr>
<td>Art 2, 12c .................................... 4</td>
<td>Art 28 ........................................ 1</td>
</tr>
<tr>
<td>Art 25 ........................................ 2</td>
<td>Art 29 ........................................ 2</td>
</tr>
<tr>
<td>Art 26 ........................................ 3</td>
<td>Art 30 ........................................ 2</td>
</tr>
<tr>
<td>Art 27 ........................................ 1</td>
<td>Art 27 ........................................ 1</td>
</tr>
</tbody>
</table>

AUTOMOTIVE TECHNOLOGY

The automotive technology program consists of four semesters.

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.T. 54, 55</td>
<td>16</td>
<td>A.T. 56, 57</td>
<td>16</td>
</tr>
<tr>
<td>English 60</td>
<td>3</td>
<td>Speech 1</td>
<td>3</td>
</tr>
<tr>
<td>Math 91 and 92</td>
<td>6</td>
<td>English 53b</td>
<td>3</td>
</tr>
<tr>
<td>History 57</td>
<td>3</td>
<td>Physics 10</td>
<td>3</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>General Business 75</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Political Science 57</td>
<td>2</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Physical Education</td>
<td>1</td>
</tr>
</tbody>
</table>
BUSINESS EDUCATION

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 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 students majoring in the office clerical, secretarial and merchandising fields. Placement assistance is provided participants through the faculty coordinator of each program.

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

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:

<table>
<thead>
<tr>
<th>Units</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hygiene 1 ..................................................</td>
<td>2</td>
</tr>
<tr>
<td>2. Physical Education ........................................</td>
<td>2</td>
</tr>
<tr>
<td>(required of all students under 25 years of age)</td>
<td></td>
</tr>
<tr>
<td>3. History and Government ..................................</td>
<td>5 or 6</td>
</tr>
<tr>
<td>4. English and Speech ........................................</td>
<td>6</td>
</tr>
<tr>
<td>(Business English 53a and 53b are recommended for students seeking a certificate.)</td>
<td></td>
</tr>
<tr>
<td>5. All of the courses listed under Business Major Requirements in one of the Certificate Programs, the General Business major, or a transfer major.</td>
<td></td>
</tr>
<tr>
<td>6. Additional elective courses to complete the 60 units required for graduation. It is recommended that at least one elective be in the area of art, music, philosophy, literature, psychology, life science, or physical science.</td>
<td></td>
</tr>
</tbody>
</table>

56
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 certificate, a student must complete the requirements as outlined in the certificate program of his choice. At least a C grade must be earned in all courses which fulfill requirements for the certificate.

Accounting Certificate Program

Business Major Requirements:
Accounting 1a, 1b, 2a, 2b, 3; Business Administration 18a, 18b; Statistics 1

Accounting Certificate Requirements:
Completion of the major requirements listed above plus at least 9 units from the following courses:
Business Administration 40, 41, 42, 43, 47; Business English 56; Economics 1a, 1b or 57; General Business 68; Mathematics 2

Business Administration Certificate Program

Business Major Requirements:
Accounting 1a, 1b; Business Administration 18a, 18b, 40, 42, 47; Economics 1a or 57; Statistics 1

Business Administration Certificate Requirements:
Completion of the major requirements listed above plus at least 12 units from the following courses:
Accounting 2a, 2b, 3; Business Administration 41, 43, 46; General Business 55, 64, 68; Merchandising 26 or 56, Psychology 1a or 55; Sociology 1a or 2; Philosophy 6a, Mathematics 2.

Home Furnishings Certificate Program

Business Major Requirements:
Merchandising 58a, 59b, 26 or 56, 50, 101a, 101b; Art 26; Business English 53a or English 1a; General Business 64

Home Furnishings Certificate Requirements:
Completion of the major requirements listed above plus at least 9 units from the following: General Business 75, Accounting 1a, Secretarial Science 3a, Art 25, General Business 55, Merchandising 58b
OCCUPATIONAL PROGRAMS

MERCHANDISING CERTIFICATE PROGRAM

Business Major Requirements:
Merchandising 26 or 56, 50, 58a, 58b, 59a, 59b; 101a, 101b;
General Business 64

Merchandising Certificate Requirements:
Completion of the major requirements listed above plus at least
9 units from the following:
Business Administration 18a, 47; General Business 75 and 78 or
Accounting 1a; General Business 55, 67; Secretarial Science 3a;
Speech 1

OFFICE CLERICAL CERTIFICATE PROGRAM

Business Major Requirements:
Data Processing 50; General Business 15, 55, 64, 104a, 105a;
Business Administration 41; General Business 75 and 78 or
Accounting 1a

General Office Clerical Certificate:
Completion of the major requirements listed above plus Account-
ing 72; General Business 67, 77, 62, 104b, 105b; Secretarial
Science 3a; and plus at least three units from Business Administra-
tion 18a, 40; General Business 68 or Merchandising 56

Clerk-Typist Certificate:
Completion of the Business Major Requirements plus Business
English 53b; General Business 62; 104b, 105b; Secretarial Science
53c, 53d; plus at least three units from Business Administration
18a, 40; General Business 68 or Merchandising 56

REAL ESTATE AND ESCROW CERTIFICATE PROGRAMS

California Real Estate Certificate Requirements (in recommended se-
quence):
Real Estate 88a, 88b, 19, 89, 52 (Real Estate 51 may be taken
instead of 88a after 52), plus 9 units from among the following:
Real Estate 54, 80, 86; real estate courses offered by the Univer-
sity of California Extension Division; Business Administration
18a, 40; English 1a or Business English 53a; Economics 1a or
57; General Business 68, 75, 78; Merchandising 26

California Escrow Certificate Requirements:
Real Estate 53a, 53b, 53c, 19, 89, plus 9 units from among the
following: Real Estate 88a, 88b; Business Administration 18a,
40; English 1a or Business English 53a; General Business 68,
75, 78
SECRETARIAL CERTIFICATE PROGRAM

Requirements for Business Major or General Secretarial Certificate:
- Secretarial Science 5, 53c, 53d, 52a, 52b, 102a, 102b, 103b;
- General Business 15 and Accounting 1a; Business Administration 18a, Business English 53a, 53b

Executive Secretarial Certificate Requirements:
- Completion of the General Secretarial Certificate requirements plus the following: Business Administration 18b, 40; Accounting 1a; Economics 57 or Economics 1a

Medical Secretarial Certificate Requirements:
- Secretarial Science 53c, 53d, 52a, 52b, 6; 102a, 102b, 103a, 103b;
- Business Administration 18a; Medical Secretary 55, 56, 57, 58;
- Business English 53b

Medical Office Receptionist Certificate Requirements:
- Secretarial Science 6, 53c, 53d, 102a, 102b, 103a, 103b; Medical Secretary 55, 56, 57, and 58; Business English 53b

DATA PROCESSING

The Chaffey College Data Processing Program is designed to provide students with the training needed for employment as unit record machine operators, computer operators, or computer programmers. The two-year program leads to an Associate in Arts Degree. A Data Processing Certificate may be earned without the A.A. degree.

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Units</th>
<th>Second Semester</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Data Processing 50</td>
<td>3</td>
<td>*Data Processing 61</td>
<td>4</td>
</tr>
<tr>
<td>*Data Processing 51</td>
<td>4</td>
<td>General Business 64</td>
<td>1</td>
</tr>
<tr>
<td>General Business 15</td>
<td>2</td>
<td>Business Administration 40</td>
<td>3</td>
</tr>
<tr>
<td>*Accounting 1a</td>
<td>4</td>
<td>*Accounting 1b</td>
<td>4</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/2</td>
<td>Physical Education</td>
<td>1/2</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>*Data Processing 62</td>
<td>4</td>
<td>*Data Processing 64</td>
<td>4</td>
</tr>
<tr>
<td>*Data Processing 63</td>
<td>1</td>
<td>*Data Processing 65</td>
<td>2</td>
</tr>
<tr>
<td>Business Administration 43</td>
<td>3</td>
<td>Speech 1</td>
<td>3</td>
</tr>
<tr>
<td>Business English 53a</td>
<td>3</td>
<td>Political Science 57</td>
<td>2</td>
</tr>
<tr>
<td>History 57</td>
<td>3</td>
<td>Elective</td>
<td>4</td>
</tr>
<tr>
<td>Elective</td>
<td>1</td>
<td>Physical Education</td>
<td>1/2</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Successful completion of the courses marked with an asterisk entitles the student to a certificate in Data Processing.
OCCUPATIONAL PROGRAMS

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 April 14. 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 examination:
   - ACT (American College Test)

IV. Recommendation:
   - One letter of recommendation

V. Interview with chairman of Dental Assisting Department

VI. Selection by Dental Assisting Committee

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>5</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>1/2</td>
<td>Physical Education</td>
<td>1/2</td>
</tr>
</tbody>
</table>

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ELECTRONICS

The Electronics Department of Chaffey College offers programs designed to fulfill three general needs:

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

(2) A two-year "B" electronics technician program is geared more to the practical approach rather than the theoretical.

(3) A number of advanced courses enable the trained electronics technician to further his knowledge in a specified field.

### ELECTRONICS ENGINEERING 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 60</td>
<td>3</td>
<td>History 57</td>
<td>3</td>
</tr>
<tr>
<td>Math A</td>
<td>5</td>
<td>Speech 1</td>
<td>3</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></td>
<td></td>
</tr>
</tbody>
</table>

**Advanced Courses:**

- Electronics 99a, 99b Code Practice ........................................ 1 unit each
- Electronics 71a, 71b Special Project in Electronics .................. 1 unit each
- Electronics 72a, 72b Special Project in Electronics .................. 2 units each
- 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

61
**OCCUPATIONAL PROGRAMS**

"B" 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 68</td>
<td>9</td>
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<tr>
<td>Electronics 56</td>
<td>1</td>
<td>Electronics 69</td>
<td>9</td>
</tr>
<tr>
<td>Electronics 67</td>
<td>9</td>
<td>History 57</td>
<td>3</td>
</tr>
<tr>
<td>English 60</td>
<td>3</td>
<td>Physics 10</td>
<td>3</td>
</tr>
<tr>
<td>Math 91 and 92</td>
<td>6</td>
<td>Political Science 57</td>
<td>2</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>Speech 1</td>
<td>3</td>
</tr>
<tr>
<td>English 95</td>
<td>2</td>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Electives*</td>
<td>3</td>
</tr>
</tbody>
</table>

*Suggested electives — Math or Drafting 56

**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>
<tr>
<td>Mathematics 53a</td>
<td>1</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 2A</td>
<td>5</td>
</tr>
<tr>
<td>Chemistry 1a, 1b</td>
<td>10</td>
</tr>
<tr>
<td>Chemistry 5</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 8</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 9</td>
<td>3</td>
</tr>
<tr>
<td>Sec. Science (Typing)</td>
<td>2</td>
</tr>
<tr>
<td>Drafting 1a</td>
<td>3</td>
</tr>
<tr>
<td>Biological Science</td>
<td>3-5</td>
</tr>
</tbody>
</table>
2. **Drafting Technician:**

Required courses for all drafting technicians:

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drafting 1a, 51a, 52 ... 6</td>
<td>Mathematics through trigonometry</td>
</tr>
</tbody>
</table>

**Electrical Option:**

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drafting 51b, 56, 58 ... 9</td>
<td>Electricity 51a, 51b or</td>
</tr>
<tr>
<td>Electronics 50 ............... 3</td>
<td>Physics 10, 11 ............... 6 or 4</td>
</tr>
<tr>
<td>Electronics 56 ............... 1</td>
<td>Electronics 53 ............... 4</td>
</tr>
</tbody>
</table>

**Architectural Option:**

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 2a, 2b ..................... 4</td>
<td>Drafting 3a, 3b, 3c ............... 9</td>
</tr>
<tr>
<td>Art 3a, 3b ..................... 4</td>
<td>Engineering 1a, 1b ............... 6</td>
</tr>
</tbody>
</table>

**Mechanical Option:**

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drafting 51a, 51b ............. 6</td>
<td>Electronics 56 .................... 1</td>
</tr>
<tr>
<td>Drafting 56 ..................... 3</td>
<td>Engineering 1a .................... 3</td>
</tr>
<tr>
<td>Electronics 50 .................. 3</td>
<td>Engineering 25a .................... 3</td>
</tr>
</tbody>
</table>

3. **Surveying Technician:**

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drafting 1a, 1b ............... 6</td>
<td>Engineering 1a, 1b ............... 6</td>
</tr>
<tr>
<td>Drafting 51a, 51b ............... 6</td>
<td>Engineering 25a ............... 3</td>
</tr>
<tr>
<td>Geology 1a ..................... 4</td>
<td></td>
</tr>
</tbody>
</table>
OCCUPATIONAL PROGRAMS

FIRE SCIENCE

The Fire Science curriculum is designed to serve both as an in-service training program and as a pre-employment program for junior college students aspiring to enter the field of fire fighting and fire suppression.

An Associate in Arts degree is offered at Chaffey College or the student may transfer courses to a four-year college to get a bachelor's degree with specialization in fire science.

A fire science cadet program has been developed in cooperation with municipal fire departments which gives opportunity for outstanding students to work part-time and gain practical experience in a fire department as well as receive financial assistance while attending college.

Suggested program for Associate in Arts Degree:

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Units</th>
<th>Second Semester</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Science 12</td>
<td>3</td>
<td>Fire Science 14</td>
<td>3</td>
</tr>
<tr>
<td>History 57</td>
<td>3</td>
<td>Political Science 57</td>
<td>2</td>
</tr>
<tr>
<td>English 95</td>
<td>2</td>
<td>Psychology 52</td>
<td>2</td>
</tr>
<tr>
<td>Supervision 51</td>
<td>2</td>
<td>Fire Science 20</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 2A</td>
<td>5</td>
<td>Speech 61</td>
<td>3</td>
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<tr>
<td>Physical Education</td>
<td>1/2</td>
<td>Hygiene 1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical Education</td>
<td>1/2</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>Fire Science 22</td>
<td>3</td>
<td>Fire Science 25</td>
<td>3</td>
</tr>
<tr>
<td>Fire Science 23</td>
<td>3</td>
<td>English 61</td>
<td>3</td>
</tr>
<tr>
<td>Fire Science 26</td>
<td>2</td>
<td>Fire Science 28</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 53</td>
<td>3</td>
<td>Fire Science 29</td>
<td>3</td>
</tr>
<tr>
<td>Fire Science 27</td>
<td>3</td>
<td>Electives</td>
<td>2</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/2</td>
<td>Physical Education</td>
<td>1/2</td>
</tr>
</tbody>
</table>

FOOD SERVICE MANAGEMENT

Classes in Food Service Management are offered to persons who are employed in the School Lunch Program, public restaurants, hotels, industrial cafeterias and other eating establishments.

An advisory committee consisting of supervisors of School Lunch Programs and managers of other food service businesses has been influential in developing and expanding the training program.

Certificates in Food Service Management are issued to those students who complete ten courses described in the Food Service Management curriculum. Six of the ten courses are required; four are elective.
Required Courses: | Units | Elective Courses: | Units
---|---|---|---
Food Service 56 | 2 | Food Service 70 | 3
Food Service 60 | 2 | Food Service 72 | 3
Food Service 62 | 1 | General Business 75 | 3
Food Service 64 | 2 | General Business 78 | 3
Food Service 66 | 2 | English 61 | 3
Supervision 58 | 2 | English 95 | 2
| | Mathematics 90 | 1 or 2
| | Psychology 52 | 3
| | Speech 61 | 3
| | Supervision 51 | 3

All required and elective courses are offered at least one semester in any two-year period. Some courses are offered every semester.

A two-year projection of course offerings, prepared each semester, is available on request to enable the student to prepare his program for the certificate or the degree.

Students may qualify for an A.A. degree with a Food Service Management major by completing the usual graduation requirements of 60 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.

**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>
</table>
| Home Economics 1a, 1b | 3-3 | Home Economics 23 | 3
| Home Economics 5a | 2 | Home Economics 51abcd |
| Home Economics 5b | 2 | each semester | 1
| Home Economics 10 | 2 | Home Economics 55 | 5
| Home Economics 21 | 2 |

See Index for graduation requirements.
**OCCUPATIONAL PROGRAMS**

**INTERIOR DESIGN**

Suggested program for Certificate of Completion candidates:

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Units</th>
<th>Second Semester</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art/Home Economics 23</td>
<td>3</td>
<td>Art/Home Economics 25</td>
<td>3</td>
</tr>
<tr>
<td>Art 2</td>
<td>3</td>
<td>Mathematics 78 or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>*English 1a or Business English 53a</td>
<td>3</td>
<td></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>Art/Home Economics 26</td>
<td>3</td>
<td>Art/Home Economics 27</td>
<td>1</td>
</tr>
<tr>
<td>Art/Home Economics 29</td>
<td>2</td>
<td>Art/Home Economics 28</td>
<td>1</td>
</tr>
<tr>
<td>Speech</td>
<td>3</td>
<td>‡Art/Home Economics 30</td>
<td>2</td>
</tr>
<tr>
<td>Merchandising 26</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Suggested program for candidates for an Associate in Arts degree:

**FRESHMAN YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Units</th>
<th>Second Semester</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art/Home Economics 23</td>
<td>3</td>
<td>Art/Home Economics 25</td>
<td>3</td>
</tr>
<tr>
<td>Art 2</td>
<td>3</td>
<td>Math 78 or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>*English 1a or Business English 53a</td>
<td>3</td>
<td>Hygiene 1</td>
<td>2</td>
</tr>
<tr>
<td>U.S. History and/or Political Science</td>
<td>2 or 3</td>
<td>U.S. History and/or Political Science</td>
<td>2 or 3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/2</td>
<td>Physical Education</td>
<td>1/2</td>
</tr>
<tr>
<td>Electives</td>
<td>3 or 4</td>
<td>Electives</td>
<td>4 or 5</td>
</tr>
</tbody>
</table>

**SOPHOMORE YEAR**

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Units</th>
<th>Fourth Semester</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art/Home Economics 26</td>
<td>3</td>
<td>Art/Home Economics 27</td>
<td>1</td>
</tr>
<tr>
<td>Art/Home Economics 29</td>
<td>2</td>
<td>Art/Home Economics 28</td>
<td>1</td>
</tr>
<tr>
<td>Speech 1</td>
<td>3</td>
<td>‡Art/Home Economics 30</td>
<td>2</td>
</tr>
<tr>
<td>Merchandising 26</td>
<td>3</td>
<td>Physical Education</td>
<td>1/2</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/2</td>
<td>Electives</td>
<td>10 or 11</td>
</tr>
<tr>
<td>Electives</td>
<td>4 or 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Recommended Electives: General Business 75; Art 1a, 1b; Merchandising 50; Secretarial Science 3a, Sociology 1a; Psychology 1a; Psychology 33; Psychology 55.*

*Placement in English and mathematics depends on admission test scores.*

‡*May be taken concurrently with Art/Home Economics 27 and Art/Home Economics 28.*

66
INDUSTRIAL MANAGEMENT

The Industrial Management curriculum is designed to train young men and women for management positions in industry and business. Pre-employment as well as in-service training is provided.

An Associate in Arts degree is offered at Chaffey College, or the student may transfer courses to a four-year college to get a bachelor’s degree with specialization in Industrial Management or related fields.

Work-study experience is also offered in cooperation with local industries. Outstanding students work part time, gaining practical experience in industry and receiving financial assistance while attending college.

Suggested programs for terminal students in Industrial Management:

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Units</th>
<th>Second Semester</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 50</td>
<td>3</td>
<td>Mathematics 91</td>
<td>3</td>
</tr>
<tr>
<td>History 57</td>
<td>3</td>
<td>Political Science 57</td>
<td>3</td>
</tr>
<tr>
<td>English 60</td>
<td>3</td>
<td>Supervision 76</td>
<td>3</td>
</tr>
<tr>
<td>Supervision 51</td>
<td>3</td>
<td>Psychology 52</td>
<td>3</td>
</tr>
<tr>
<td>Electricity 51a</td>
<td>3</td>
<td>Electricity 51b</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/2</td>
<td>Physical Education</td>
<td>1/2</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>Electricity 52a</td>
<td>3</td>
<td>Electricity 52b</td>
<td>3</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>Speech 61</td>
<td>3</td>
</tr>
<tr>
<td>Data Processing 50</td>
<td>3</td>
<td>Supervision 56</td>
<td>2</td>
</tr>
<tr>
<td>English 61</td>
<td>3</td>
<td>Economics 57</td>
<td>3</td>
</tr>
<tr>
<td>Supervision 59</td>
<td>3</td>
<td>Supervision 55</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/2</td>
<td>Physical Education</td>
<td>1/2</td>
</tr>
</tbody>
</table>

Students who desire to transfer to a four-year college should consult the catalog of that school.

JOURNALISM

Training for skill and power in writing is the aim of the two-year "grass-roots" Journalism 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>U.S. History and/or Political Science</td>
<td>5 or 6</td>
<td>English 36a, 36b, or 5a, 5b</td>
<td>6</td>
</tr>
<tr>
<td>English 1a</td>
<td>3</td>
<td>Journalism 57a, 57b</td>
<td>4</td>
</tr>
<tr>
<td>Speech 1</td>
<td>3</td>
<td>Economics 1a, 1b, or 58</td>
<td>6</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>Sociology 1a, 1b</td>
<td>6</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Physical Education</td>
<td>1</td>
</tr>
</tbody>
</table>

Suggested Electives: Art 1a, Psychology 1a or 55, Secretarial Science 3a, 3b.
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>Physical Education</td>
<td>1</td>
<td>Lithography 61a, 61b</td>
<td>6</td>
</tr>
<tr>
<td>History 57</td>
<td>3</td>
<td>Physical Education</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 60</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 95</td>
<td>2</td>
</tr>
<tr>
<td>Speech 1</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Political Science 57</td>
<td>2</td>
<td></td>
<td></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.

A police cadet program in cooperation with local police departments offers a few placement opportunities for those students who qualify.

New recruits or law enforcement personnel should enroll in the two semesters of Introduction to Law Enforcement and Administration of Justice in sequence (Police Science 10 and 11).

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:
**OCCUPATIONAL PROGRAMS**

<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</td>
<td>3</td>
<td>Secretarial Science 3a</td>
<td>3</td>
</tr>
<tr>
<td>Biology 1a</td>
<td>4</td>
<td>(Typing)</td>
<td>3</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>
</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>
</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>Political Science or U.S. History</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>Physical Education</td>
<td>1/2</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 or U.S. History</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>
</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.
**OCCUPATIONAL PROGRAMS**

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 a high-school graduate or the equivalent as determined by tests.
5. Have completed English 1a and Psychology 1a before entrance into the program.
6. Be between the ages of 17 and 45.
7. Be in good physical and mental health as determined by a health examination.
8. Have a personal interview with the Admissions Sub-committee.

Recommended high-school courses:

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

**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>Summer Session</th>
<th>Units</th>
<th>First Semester (Fall)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology 1a</td>
<td>3</td>
<td>Anatomy 1 or Microbiology 1</td>
<td>4</td>
</tr>
<tr>
<td>English 1a</td>
<td>3</td>
<td>Physiology 1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fundamentals of Nursing 1</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical Education</td>
<td>1/2</td>
</tr>
</tbody>
</table>

70
### OCCUPATIONAL PROGRAMS

#### Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy 1 or Microbiology 1</td>
<td>4</td>
</tr>
<tr>
<td>Fundamentals of Nursing 2</td>
<td>7</td>
</tr>
<tr>
<td>Fundamentals of Nursing 3</td>
<td>4</td>
</tr>
<tr>
<td>Physical Education</td>
<td></td>
</tr>
</tbody>
</table>

#### Summer Session

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology 1b</td>
<td>3</td>
</tr>
<tr>
<td>Graduation Requirement</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sociology 1a</td>
<td>3</td>
</tr>
<tr>
<td>Fundamentals of Nursing 4</td>
<td>9</td>
</tr>
<tr>
<td>Graduation Requirement</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/2</td>
</tr>
</tbody>
</table>

#### Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamentals of Nursing 5</td>
<td>10</td>
</tr>
<tr>
<td>Fundamentals of Nursing 6</td>
<td>1</td>
</tr>
<tr>
<td>Graduation Requirement</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/2</td>
</tr>
</tbody>
</table>

### QUALITY CONTROL

Quality Control classes are offered to employees and prospective employees of industry in quality control and quality planning positions.

Courses are instructed by representatives from industry who have had a wide range of experience and academic training in the field.

Junior colleges, The American Society for Quality Control and industry throughout the local Southern California area have adopted a certificate program consisting of five required and three elective courses.

The certificate in Quality Control at Chaffey College consist of the following:

#### Required Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervision 80</td>
<td>3</td>
</tr>
<tr>
<td>Supervision 83</td>
<td>3</td>
</tr>
<tr>
<td>Supervision 85</td>
<td>3</td>
</tr>
<tr>
<td>Supervision 87</td>
<td>3</td>
</tr>
<tr>
<td>Supervision 89</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Elective Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Processing 50</td>
<td>3</td>
</tr>
<tr>
<td>Drafting 54c</td>
<td>1/2</td>
</tr>
<tr>
<td>English 61</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 50</td>
<td>3</td>
</tr>
<tr>
<td>Supervision 51</td>
<td>3</td>
</tr>
<tr>
<td>Supervision 55</td>
<td>3</td>
</tr>
</tbody>
</table>

All required and elective courses are offered at least one semester in any two-year period. A two-year projection of course offerings is available on request to enable the student to prepare his program.

### SUPERVISION

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

An advisory committee of industrial and business representatives, working with representatives of the California State Department of Education, Bureau of Industrial Education, has assisted 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 student who complete a program of at least eight courses in the Supervision curriculum. 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 95 (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 demand.

Students may qualify for an A.A. degree with a Supervision major by completing the usual graduation requirements of 60 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 students must have at least 20 units in Supervision.

VOCATIONAL NURSING

This program covers a period of three semesters. The next class will start in the fall of 1968. 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>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing 51a</td>
<td>8</td>
<td>Nursing 53</td>
<td>3</td>
</tr>
<tr>
<td>Nursing 52a</td>
<td>6</td>
<td>Nursing 51b</td>
<td>6</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/2</td>
<td>Nursing 52b</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nursing 54</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical Education</td>
<td>1/2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing 51c</td>
<td>8</td>
</tr>
<tr>
<td>Nursing 52c</td>
<td>7</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/2</td>
</tr>
</tbody>
</table>

SPECIALIZED WORK EXPERIENCE PROGRAMS

Several specialized work experience programs are offered. Business Education has had a long-standing program of work experience in merchandising and the secretarial-office-clerical areas. The police science program has a number of cadet openings in which potentially qualified peace officers are offered part-time employment in a police department within the Chaffey District while continuing in school in the police science curriculum. A fire science cadet program is also offered for potentially qualified firemen.

A new work experience program is being developed with local industries whereby potential supervision personnel can work half time while carrying out a prescribed curriculum at the college.
TRANSFER PROGRAMS

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:

Agriculture
Architecture
Art
Bacteriology
Biology
Botany
Business
Chemistry
Criminology
Dental Hygiene
Dentistry
Drama
Economics
Engineering
English
Fire Science
Forestry
French
Geology
German
Health and Safety
History
Home Economics
Interior Design
Journalism

Lab Technician
Law
Liberal Arts
Librarianship
Literature
Mathematics
Medicine
Music
Nursing
Occupational Therapy
Optometry
Pharmacy
Philosophy
Physical Education
Physical Therapy
Physics
Political Science
Police Science
Psychology
Recreation Leadership
Sociology
Spanish
Speech, Radio, TV
Veterinary Medicine
Zoology
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 curricula. The University of California at Berkeley and the University of Southern California offer degrees in architecture, and California State Polytechnic College at San Luis Obispo 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 curricula 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</td>
<td>3</td>
<td>Foreign Language</td>
<td>4</td>
</tr>
<tr>
<td>Physics 2a, 2b</td>
<td>8</td>
<td>Social Science or Humanities</td>
<td>6</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Hygiene 1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical Education</td>
<td>1</td>
</tr>
</tbody>
</table>
EDUCATION

Elementary, Secondary and Junior College

Credentials and requirements for credentials to teach in California public schools have recently been 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. Teaching credentials require a major and a minor in subjects (or areas) commonly taught in public high schools. The major must be an academic subject or area. Some of these have specific lower division requirements.

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 requirements of every college. The student is urged to consult the catalog of the institution to which he plans to transfer.
## SUGGESTED COURSE SEQUENCE FOR THE UNIVERSITY OF CALIFORNIA

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 12a, 12b</td>
<td>10</td>
<td>Physics 4b, 4c</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 1a, 1b</td>
<td>10</td>
<td>Engineering 45, 35</td>
<td>6</td>
</tr>
<tr>
<td>*Engineering 25a, 25b</td>
<td>3, 2</td>
<td>English 1a and Speech 1</td>
<td>6</td>
</tr>
<tr>
<td>Engineering 1a</td>
<td>3</td>
<td>§Engineering 1b or</td>
<td></td>
</tr>
<tr>
<td>Physics 4a</td>
<td>4</td>
<td>Mathematics 14ab</td>
<td>3 or 4</td>
</tr>
<tr>
<td>‡Mathematics 53a, 53b</td>
<td>1-1</td>
<td>Mathematics 18</td>
<td>4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>History 17a, 17b</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hygiene 1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical Education</td>
<td>1</td>
</tr>
</tbody>
</table>

*Students are advised to consult with a counselor and/or a member of the Engineering Department before completing registration in Engineering 25a.

‡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.

## SUGGESTED COURSE SEQUENCE FOR MANY CALIFORNIA STATE COLLEGES*

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 3a, 3b</td>
<td>7</td>
<td>Mathematics 4a, 4b</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 1a, 1b</td>
<td>10</td>
<td>Physics 4b, 4c</td>
<td>8</td>
</tr>
<tr>
<td>‡Physics 4a</td>
<td>4</td>
<td>Engineering 45, 35</td>
<td>6</td>
</tr>
<tr>
<td>§Engineering 25a</td>
<td>3</td>
<td>English 1a, 1b</td>
<td>6</td>
</tr>
<tr>
<td>†Mathematics 53a, 53b</td>
<td>2</td>
<td>U.S. History and</td>
<td>Government</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6</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>Physical Education</td>
<td>1</td>
</tr>
</tbody>
</table>

Students should consult the catalog of the institution they plan to attend for any variation from the above course sequence.

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 who plan to attend Cal Poly should consult with their counselor for specific course requirements.

‡Students who have not taken one year of high-school physics with recommended grades must complete Engineering 1a or Physics 10 as a prerequisite to Physics 4a.

§Students are advised to consult with a counselor and/or a member of the Engineering Department before completing registration in Engineering 25a.

†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.
TRANSFER PROGRAMS

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.

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 1a</td>
<td>4</td>
<td>Political Science and/or History</td>
<td>6</td>
</tr>
<tr>
<td>Psychology 1a</td>
<td>3</td>
<td>Economics 1a</td>
<td>3</td>
</tr>
<tr>
<td>English 1a, 1b</td>
<td>6</td>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Speech 1</td>
<td>3</td>
<td>Music 27a</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Sociology 2</td>
<td>3</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>Home Economics 2a, 2b</td>
<td>6</td>
</tr>
<tr>
<td>Home Economics 10</td>
<td>2</td>
<td>Home Economics 1a</td>
<td>3</td>
</tr>
<tr>
<td>Home Economics 1a</td>
<td>3</td>
<td>Home Economics 23</td>
<td>3</td>
</tr>
<tr>
<td>Art 2a, 2b</td>
<td>4</td>
<td>Home Economics 5a, 5b</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 2A or 1a</td>
<td>5</td>
<td>Home Economics 21</td>
<td>2</td>
</tr>
</tbody>
</table>

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 4a, 4b</td>
<td>6</td>
</tr>
<tr>
<td>Science (biological or physical)</td>
<td>4</td>
<td>Economics 1a</td>
<td>6</td>
</tr>
<tr>
<td>U.S. History and/or Political Science</td>
<td>6</td>
<td>English 36a, 36b</td>
<td>6</td>
</tr>
<tr>
<td>Speech 1</td>
<td>3</td>
<td>Psychology 1a</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Physical Education</td>
<td>1</td>
</tr>
</tbody>
</table>

LAW

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) Command 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.

<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>Physical Education</td>
<td>1</td>
<td>Physical Education</td>
<td>1</td>
</tr>
</tbody>
</table>

**LITHOGRAPHY**

See Printing Management

**MEDICINE**

Ordinarily the requirement for admission to 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.
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>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 17a, 17b</td>
<td>6</td>
</tr>
<tr>
<td>Speech 1</td>
<td>3</td>
<td>Hygiene 1</td>
<td>2</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Physical Education</td>
<td>1</td>
</tr>
</tbody>
</table>

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>Microbiology 1</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics 53a</td>
<td>1</td>
<td>U.S. History and/or</td>
<td>6</td>
</tr>
<tr>
<td>Physics 2a, 2b</td>
<td>8</td>
<td>Political Science</td>
<td>3</td>
</tr>
<tr>
<td>English 1a, 1b</td>
<td>6</td>
<td>Philosophy 6a</td>
<td>3</td>
</tr>
<tr>
<td>Speech 1</td>
<td>3</td>
<td>Art or Music</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 1a</td>
<td>3</td>
<td>Hygiene 1</td>
<td>2</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Chemistry 5</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics elective</td>
<td>0-4</td>
<td>Physical Education</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.

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:

**Freshman Year** | **Units** | **Sophomore Year** | **Units**
---|---|---|---
Music 1a, 1b | 6 | Music 2a, 2b | 6
Music 21a, 21b or Music 17 | 2 | Music 3a, 3b | 6
Performance courses and applied music | 4-5 | Performance courses and applied music | 4-5
English 1a, 1b | 6 | 
Science | 8 | U.S. History and/or Political Science | 6
Foreign language | 8 | Speech 1 | 3
Hygiene | 2 | Foreign language | 4
Physical Education | 1 | Physical Education | 1

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TRANSFER PROGRAMS

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 as it is often advisable to transfer after one year at Chaffey College.

In general, the following courses are required:

*Freshman Year* | *Units* | *Sophomore Year* | *Units*
---|---|---|---
English 1a, 1b | 6 | Sociology 1a | 3
Chemistry | 5-13 | Microbiology 1 | 4
Anatomy 1 | 4 | Psychology 1b | 3
Physiology 1 | 4 | Speech 1 | 3
Psychology 1a | 3 | U.S. History or Physical Science | 6
Physical Education (Foreign language required in some colleges) | 3-8

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.

*Freshman Year* | *Units* | *Sophomore Year* | *Units*
---|---|---|---
English 1a, 1b | 6 | Physics 2a, 2b | 8
Chemistry 1a, 1b | 10 | Psychology 1a | 3
Botany 1 | 5 | Zoology 1a, 1b | 10
Mathematics C (or Mathematics 3a, 3b for UC) | 3 or 6 | U.S. History and/or Political Science | 6
Mathematics 53a | 1 | Speech 1 | 3
History 4a, 4b | 6 | Hygiene 1 | 2
Physical Education | 1 | Economics 1a (USC) | 3

*Proficiency in typewriting is required at U.S.C.*
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 plan 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>Physical Education Activities</td>
<td>1</td>
<td>Physical Education Activities</td>
<td>1</td>
</tr>
<tr>
<td>English 1a, 1b</td>
<td>6</td>
<td>Physical Education 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 10</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>Physical Education 26</td>
<td>2</td>
<td>U.S. History and/or</td>
<td></td>
</tr>
<tr>
<td>Physical Education 23</td>
<td>2</td>
<td>Political Science</td>
<td>6</td>
</tr>
</tbody>
</table>

PRINTING MANAGEMENT

Candidates for a Bachelor of Science degree in Printing Management offered at California State College at Los Angeles 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 or Literature</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>Biological Science</td>
<td>4-5</td>
<td>Accounting 1a, 1b</td>
<td>8</td>
</tr>
<tr>
<td>Hygiene 1</td>
<td>2</td>
<td>Physical Science</td>
<td>4-5</td>
</tr>
<tr>
<td>Speech 1</td>
<td>3</td>
<td>Economics 1a, 1b</td>
<td>6</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>U.S. History and/or</td>
<td></td>
<td>Business Administration 18a</td>
<td>3</td>
</tr>
<tr>
<td>Political Science</td>
<td>6</td>
<td></td>
<td></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.
TRANSER PROGRAMS

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.

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<th>Units</th>
<th>Sophomore Year</th>
<th>Units</th>
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<td>U.S. History and/or Political Science</td>
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<td>English 5a, 5b</td>
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VETERINARY MEDICINE

University of California at Davis

The following curriculum satisfies both the pre-veterinary and the general requirements for the Animal Science major at Davis.

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<th>Sophomore Year</th>
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<td>Zoology la, 1b</td>
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84
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.

CALIFORNIA STATE COLLEGES

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

Eligibility for a state college is determined on the basis of the student's high-school average and his ACT or SAT scores.

A student who meets the entrance requirements and who chooses to enter a 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.
TRANSFER PROGRAMS

STATE COLLEGE GENERAL EDUCATION REQUIREMENTS

A. Psychology 1a ................................................................. 3 units

B. Social Science ............................................................... 9-12 units
   U. S. History ................................................................. 3 units
   Political Science .......................................................... 3 units
   Social Science electives ................................................. 3-6 units

C. Natural Science .............................................................. 9-12 units
   1. Biological
   2. Physical

D. English 1a ........................................................................ 3 units
   Speech 1 ........................................................................... 3 units

E. Literature, philosophy, or arts .......................................... 6-12 units

F. Hygiene 1 ........................................................................... 2 units

G. Foreign language (required in some departments) ............. 0-12 units

H. General electives from the above (A-F) ................................ 9-12 units

I. Lower-division requirements for the major (see state college
   catalog).

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

All applicants are required to submit transcripts of previous schooling as specified by
the college. All freshmen and lower division transfer students must take either the Scholastic Aptitude Test
(SAT) or American College Test (ACT) as specified below. In addition some of the colleges require upper
division transfer applicants to take one of these tests for guidance purposes. Freshmen applicants in partic-
ular are urged to take the required test no later than January of the year in which they plan to begin col-
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UNIVERSITY OF CALIFORNIA

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

(1) For full transfer status the high-school program should include the following minimum requirements with an 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 a college entrance examination, such as SAT.

UNIVERSITY OF CALIFORNIA AT BERKELEY

The University of California has recently gone on the quarter system. As a result, compatibility of Chaffey College semester courses with the new quarter courses is not entirely clear. The following courses will probably be accepted for the Letters and Science requirements at these schools. However, students should verify these lists with their counselors.

For information on other campuses of the University of California (Irvine, San Diego, Santa Cruz), see the respective catalogs of these institutions.
# UNIVERSITY OF CALIFORNIA AT BERKELEY
## College of Letters and Science

<table>
<thead>
<tr>
<th>ENGLISH</th>
<th>English 1a, 1b</th>
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<tbody>
<tr>
<td>FOREIGN LANGUAGE</td>
<td>Through course 3</td>
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<tr>
<td>MATHEMATICS</td>
<td>None</td>
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<tr>
<td>HUMANITIES</td>
<td>11 units. Completion of four courses selected from at least two groups, including not more than two courses in history and one course in performing arts. Except for performing arts, courses selected must be for three or more units each.</td>
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<tr>
<td>1 — Group A</td>
<td>Art: Any courses including some performing arts courses.</td>
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<td>Music: Any courses (except Music 11lab and lab) including some performing music courses.</td>
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<tr>
<td>2 — Group B</td>
<td>English 5a, 5b, 36a, 36b, and 34c, Drama 1 and 2</td>
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<tr>
<td>3 — Group C</td>
<td>History 17a, 17b, 4a, 4b, 8a, 8b, Philosophy 6a, 6b</td>
</tr>
<tr>
<td>NATURAL SCIENCES</td>
<td>11 units. Completion of four courses including at least one course in group A and at least one course from group B.</td>
</tr>
<tr>
<td>1 — Group A</td>
<td>Physical Sciences: Chem. 1a, Physics 2a, 4a or 10</td>
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<tr>
<td>2 — Group B</td>
<td>Biological Sciences: Biology 1a, 1b, both parts to be completed</td>
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<tr>
<td>3 — Group C</td>
<td>Additional physical and biological sciences: Anthro. 1, Astron. 1, Microbiol. 1, Chem. 1b, 5, and 8, Geol. 1a, 1b, Math. 3a, 4a, 4b, or 12ab, Phys. 2b, 4b, Physiol. 1, Stat. 2, Botany 1, Zoology 1a</td>
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<tr>
<td>SOCIAL SCIENCES</td>
<td>Completion of four courses and four or more units each, including not more than two courses in history. Anthro. 2; Geog. 1b; Hist. 17a, 17b, 8a, 8b, 4a, 4b, Political Science 1a, 1b or 3; Psychology 1a, 33; Sociology 1a, 1b; Economics 1a, 1b</td>
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TRANSFER PROGRAMS

UNIVERSITY OF CALIFORNIA AT LOS ANGELES
College of Letters and Science

<table>
<thead>
<tr>
<th>ENGLISH</th>
<th>English 1a</th>
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<tr>
<td>FOREIGN LANGUAGE</td>
<td>16 units in one or two languages, with a minimum of 8 units in any one language</td>
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<tr>
<td>MATHEMATICS</td>
<td>2 years or high school mathematics, usually algebra and geometry</td>
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</table>

BREADTH REQUIREMENTS
College of Letters and Science

The general education requirements in physical science, life science, humanities, and social science vary according to the student's major. The number of semester units required by the student's major is shown in the chart below:

<table>
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<tr>
<th>Student's Major Division</th>
<th>Number of Units Required in:</th>
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<tbody>
<tr>
<td>Physical Sciences</td>
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<tr>
<td>Life Sciences</td>
<td>8</td>
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<tr>
<td>Humanities</td>
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<tr>
<td>Social Sciences</td>
<td>8</td>
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</table>

The courses to meet the above requirements are the following:

HUMANITIES
Philos. 6a, 6b, 3 or 10; Engl. 5a, 5b, 36a, 36b, 34c; all in English or all in physics

NATURAL SCIENCES
Life Sciences: Any 2 semesters of biology 1a, 1b, microbiol., botany, or zoology
Physical Sciences: 1 course in chemistry and 1 in physics (Chem. 2A and Phys. 10 acceptable)

SOCIAL SCIENCES
(A student may not use for this requirement or for limited elective a course he is also using to satisfy the requirement in American History and Institutions.) Anthro. 2; Econ. 1a, 1b; Geog. 1b; Hist. 4a, 4b, Hist. 17a, 17b, Hist. 19a, 19b; Hist. 8a, 8b; Pol. Sci. 1a, 1b or 7; Psych. 1a; Soci. 1a, 1b. (At least two courses must be in one social science subject.)

LIMITED ELECTIVES
Every student will take two courses in art, history, literature, music, or philosophy
<table>
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<tr>
<th>ENGLISH</th>
<th>English 1a, 1b</th>
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<tbody>
<tr>
<td>FOREIGN LANGUAGE</td>
<td>Through course 3</td>
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<tr>
<td>MATHEMATICS</td>
<td>None</td>
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<tr>
<td>HUMANITIES</td>
<td>1. History 4a, 4b</td>
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<td>2. At least two courses from: Art 1a, 1b; Music 2a, 2b; Music 27a, 27b; Philos. 6a, 6b; English 36a, 36b; English 5a, 5b</td>
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<tr>
<td>NATURAL SCIENCES</td>
<td>1. <em>Life Sciences</em>: (2 courses — 8 quarter units — or 1 course of 5 semester units) Biol. 2, 1a, 1b, 12; Microbiology 1; Botany 1, 2, 3; Zoology 1a, 1b; Anat. 1; Physiol. 1; Biology 33a, 33b</td>
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<td>2. <em>Physical Sciences</em>: (2 courses — 8 quarter units, or 1 course of 5 semester units) Chem. 2A, 1a, 1b, 8; Chem. 5; Astron. 1; Physics 10, 2a, 2b, 4a, 4b, 4c; Geology 2, 1a, 1b</td>
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<tr>
<td>SOCIAL SCIENCES</td>
<td>Two courses from: Anthropology 2; Economics 1a, 1b; Geography 1a, 1b; Psychology 1a, 33; Sociology 1a, 1b; Political Science 1a, 1b</td>
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<tr>
<td>ADDITIONAL REQUIREMENTS</td>
<td>1. Each student must take one course chosen from the Humanities or the Social Science list. Additional courses accepted are the following: Hist. 17a, 17b; Philos. 3; Eng. 34a, 34b, 34c, 34d, English 38; Art 1c; Stat. 1; Mathematics 4a, 4b, 12a, 12b; Biology 31, 32</td>
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<td>2. Each student must take three courses as electives outside the major field.</td>
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TRANSFER PROGRAMS

UNIVERSITY OF CALIFORNIA AT SANTA BARBARA

College of Letters and Science

<table>
<thead>
<tr>
<th>ENGLISH</th>
<th>English 1a, 1b</th>
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<tbody>
<tr>
<td>FOREIGN LANGUAGE</td>
<td>Requirements vary, 8 - 16 units depending on the major</td>
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<tr>
<td>MATHEMATICS</td>
<td>None</td>
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| HUMANITIES | At least 12 semester units including one or more courses from each of the following areas:  
1. English 36a  
2. Philosophy 6a and 6b  
3. Fine Arts (History and Appreciation): to include Art 1a, 1b, Music 2a or 2b, or Music 27a or 27b  
4. Electives: 3 units selected from any of the above or Speech 1 |
| NATURAL SCIENCES | At least 10 semester units including one laboratory course and one or more from each of the following areas:  
1. Biology 2 or Botany 1  
2. Any chemistry, physics, or geology course  
3. Up to 5 units selected from Anthro. 1; astronomy; biology; botany; chemistry; geology; mathematics; physics; or zoology |
| SOCIAL SCIENCES | 11 units including one or more courses from each of the following areas:  
1. History — any course  
2. Up to 5 semester units in separate areas selected from: Anthro. 2, economics, or political science, Psych. 1a or Soci. 1a  
3. Up to 5 units selected from anthropology (except physical) economics, geography (except physical), history, political science, psychology or sociology |
PRIVATE COLLEGES AND UNIVERSITIES

UNIVERSITY OF SOUTHERN CALIFORNIA

College of Letters, Arts, and Sciences

A. General Requirements:
   1. English 1a, 1b ...................................................... 6 units
   2. U.S. History and/or Political Science ......................... 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 1a, 1b; Geography 1a, 1b; Political Science 7; Political Science 1a; Psychology 1a; Sociology 1a, 1b.

SCHOOL OF BUSINESS

A. Economics 1a, 1b ........................................................... 6 units
B. English 1a, 1b ............................................................... 6 units
C. Mathematics A .............................................................. 5 units
D. Natural Sciences ............................................................ 8 units
E. Accounting 1a, 1b .......................................................... 8 units
F. Humanities ........................................................................ 3 units
   One course from approved list*
G. U.S. History and/or Political Science .............................. 6 units
H. Social Sciences ............................................................. 9 units
   Three courses from approved list*

*See USC catalog.
TRANSFER PROGRAMS

CLAREMONT MEN'S COLLEGE

A. English 1a, 1b ......................................................... 6 units
B. History 4a, 4b .......................................................... 6 units
C. Political Science 1a, 1b .............................................. 6 units
D. Foreign language ........................................................ 12 units
   (May be met by achievement test. See C.M.C. catalog.)
E. Accounting 1a .......................................................... 4 units
   (Not required for majors in humanities, fine arts, and science, except management-engineering.)
F. Economics 1a, 1b ...................................................... 6 units
G. A one-year course from the following:
   Chemistry 1a, 1b  Physics 2a, 2b
   Geology 1a, 1b  Biology 1a, 1b
H. Psychology 1a ........................................................... 3 units
I. Mathematics 3a and 3b or 12a will satisfy minimum requirement.
J. Statistics 1 ................................................................. 3 units
   (Not required for humanities or management-engineering majors.)
K. Electives from:
   Art 1a, 1b  History
   Music 2a, 2b  Philosophy
   Literature

POMONA COLLEGE

A. English 1a ................................................................. 3 units
* B. Natural sciences ..................................................... 8 units
* C. Social sciences ........................................................ 12 units
* D. Literature, art or music .......................................... 3 units
E. Philosophy 6a ............................................................ 3 units
F. Foreign language ........................................................ 12 units
G. Lower-division requirements for major.
*See Pomona College catalog.
TRANSFER PROGRAMS

LA VERNE COLLEGE

A. English 1a, 1b .......................................................... 6 units
B. History 4a, 4b .......................................................... 6 units
C. Natural science .......................................................... 9 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.)

UNIVERSITY OF REDLANDS

A. English 1a, 1b .......................................................... 6 units
B. Speech 1 ............................................................... 3 units
C. History 4a, 4b .......................................................... 6 units

Courses from 2 areas ............................................. 6 units
  Philosophy 6a, 6b
  Art 1a, 1b
  Music 2a, 2b

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

D. & E. Foreign language or literature .......................... 8 units
  Must have 2 years of high-school foreign language or 1 year in college.
F. Science and mathematics ......................................... 12 units
  Must have one physical science or mathematics and one biological science. (See Redlands catalog for list.)
G. History 17a, 17b or U.S. History and Political Science ....... 6 units
  From Economics 1a, 1b, 10, Geography 1a, 1b,
  History 4a, 4b, 17a, 17b, 39, Political Science 1a, 1b,
  3, 7, Psychology 1a, Sociology 1a, 1b, 2 .......................... 6 units
H. Religion at Redlands
I. Lower-division requirements for the major. (See Redlands catalog.)

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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 includes 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 POWERPLANTS (5-5-5)
  Concurrent requirement: Aeronautics 52a, 52b, 52c. Student must be carrying 14 units.
  Theory of airplane powerplants, ignition and electricity, carburetion, powerplant instruments, powerplant accessories, operation maintenance, and trouble shooting. This course leads to FAA "E" license. Class: 5 hours.

52a, 52b, 52c  AIRPLANE POWERPLANT REPAIR AND MAINTENANCE LABORATORY (5-5-5)
  Required laboratory for Aeronautics 51a, 51b, 51c.
  Dismantling and assembly of many types of powerplants, testing of powerplants on the test block and the repair of commercial powerplants, the installation of powerplants, and a complete service study of propellers, carburetors, powerplant instruments, ignition and all powerplant accessories. Laboratory and shop practice: 15 hours.

53a, 53b, 53c  AIRCRAFT POWERPLANT MECHANICS (5-5-5)
  Prerequisite: Employment in aviation industry.
  Concurrent requirement: Aeronautics 54a, 54b, 54c.
  Theory of reciprocating aircraft powerplants, 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.
54a, 54b, 54c  AIRCRAFT POWERPLANT 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 powerplants, propellers, carburetors and accessories. This course meets the practical powerplant experience required by a student to obtain his FAA mechanics license. Laboratory and shop practice: 10 hours.

55a, 55b  AIRCRAFT POWERPLANT THEORY (3-3)
Prerequisite: Employment in aviation industry.
Theory of reciprocating aircraft powerplants, 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.
AERONAUTICS

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: 6 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 approval of instructor.
Concurrent requirement: Aeronautics 74a, 74b, 74c.
The theory of maintenance, repair, and overhaul of aircraft jet powerplants. Class: 5 hours.

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

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

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

77b  JET AND ROCKET POWERPLANT 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. 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.

100
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. 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)
A survey of the history of Western painting from Early Christian through contemporary trends with emphasis on the major artistic movements in European and American painting. Art 1a is not prerequisite to 1b. 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.
2 BASIC DESIGN (3)
All aspects of the elements of two-dimensional design including theory of color. Work in various media and assigned design problems. Class: 1 hour; laboratory, 5 hours.

2a BASIC DESIGN: GRAPHIC (2)
(Not offered 1967-1968 — See Art 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)
(Not offered 1967-1968 — See Art 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 (2)
(Not offered 1967-1968)
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 2.
A continuation of Art 2c through 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 prospective teachers. Laboratory: 3 hours.

4a, 4b BEGINNING PAINTING (3-3)
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 (3-3)
Prerequisites: Art 4a, 4b, and one of the following: Art 1a, 1b, 2a, 3a (may be taken concurrently).
A studio class for advanced painting students. Emphasis is on opaque media, such as oil and acrylic. 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 newspaper, retail and direct mail advertising. 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, 12b BASIC DESIGN (1-1)

Introduction to art elements related to two-dimensional design in black and white, and color. Use of basic design principles and color theory. Problems carried out in various media. Laboratory, 3 hours.

12c BASIC DESIGN (THREE-DIMENSIONAL) (1)

Prerequisite: Art 12a, 12b, or Art 2.

Design expressed in sculptural forms. The studio work consists of the application of design principles to a series of practical problems involving modeling and carving in various media. Laboratory: 3 hours.

14a, 14b, 14c, 14d BEGINNING AND ADVANCED PAINTING (1-1-1-1)

Prerequisites: These courses must be taken in alphabetical sequence. Pre-
requisites to 14c (in addition to 14a and 14b): Art 1, 2, or 3 (may be taken concurrently).

A workshop and class for the beginning student with individual assign-
ments as well as class assignments, demonstrations, lectures and critiques. Art 14b, 14c and 14d are continuations of Art 14a with increasingly ad-
vanced 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)

*This course is the same as Home Economics 15a.*

An introduction to problems in water color, yarn stitching, piñata making, and stained glass windows. Suggested for students preparing to become elementary teachers. Laboratory: 3 hours.

15b CRAFTS (1)

*This course is the same as Home Economics 15b.*

An introduction to problems concerning cut-paper projects, mosaics, papier-mâché, weaving in paper and yarn, and printing. Suggested for students preparing to become elementary teachers. Laboratory: 3 hours.
15c, 15d TEXTILE CRAFTS (1-1)
This course is the same as Home Economics 15c, 15d.
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 (3)
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 (3)
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 (3-3)
Prerequisites: Art 17a, Art 17b, and one of the following (which may be
taken concurrently): Art 1, 2, or 3.
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)
This course is the same as Home Economics 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 per-
sonal care and grooming. Lecture and demonstration. Open to all women.
Class: 2 hours.

23 INTERIOR DESIGN: INTRODUCTION (3)
This course is the same as Home Economics 23.
Planning the home with emphasis on livability according to varying
family and individual needs. The principles of art are applied to everyday
problems in the selection of color, design, materials, furnishings and furni-
ture. 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 obser-
vation, anatomy, structure and drapery. Laboratory: 3 hours.
25 INTERIOR DESIGN: HISTORY OF FURNITURE AND ORNAMENT (3)

This course is the same as Home Economics 25.
A comprehensive study of interior design and furniture from antiquity to the present; combining periods and styles; guides in selection; costs; furniture arrangement, refinishing and care. The special problems of furnishing for the mobile population. Class: 3 hours.

26 DECORATOR MATERIALS (3)

This course is the same as Home Economics 26.
Instruction in the selection and coordination of background features of rooms: walls and wall treatments, floors and floor coverings, windows and window treatments; introduction to textiles used in interior design; interior lighting, fixtures, and lamp design; accessories. Class: 3 hours.

27 JOB ESTIMATION (1)

This course is the same as Home Economics 27.
A practical course in processes, methods, and fundamentals used in preparing job evaluations. Class: 2 hours for 9 weeks.

28 DESIGN MANAGEMENT (1)

This course is the same as Home Economics 28.
A course in the special problems peculiar to the interior design business. Class: 2 hours for 9 weeks.

29 HOME FURNISHINGS LABORATORY (2)

This course is the same as Home Economics 29.
Principles of construction of draperies and slip covers; upholstery techniques; other home crafts; selection, use, and care of materials and tools needed for construction, finishing, or re-finishing. Class: 3 hour lecture-laboratory.

30 SUPERVISED PROJECTS IN INTERIOR DESIGN (2)

This course is the same as Home Economics 30.
Prerequisites: Art/Home Economics 23, 25, 26, 27 and 28. Art/Home Economics 27 and 28 may be taken concurrently.
Coordinated presentation of plan, furniture, material selections, color, and budget of specified problems. Class: Minimum of 6 hours.

53 INTRODUCTION TO THE FILM (2)

Recommended preparation: Art 1b or English 34e or English 5a, 5b.
Historical introduction to the appreciation of motion pictures as an art form through the study of various types of films and the literature about films. Topics discussed are the technology of filming, the beginning history of films, techniques of commercial film-making, the first historical achievements, understanding movies, the Twenties, the Thirties, the Forties, the end of Hollywood and new developments. Class: 1 hour; laboratory, 2 hours.
54a, 54b, 54c, 54d PICTORIAL COMPOSITION (1-1-1-1)
Prerequisite: Art 4a, or approval 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 approval 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 developing 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 approval 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; laboratory: 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; laboratory: 5 hours.

59a, 59b, 59c, 59d CERAMIC PROJECTS (2-2-2-2)
Prerequisite: Approval 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 approval 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, mannequins, and imagination are also used. Class: 1 hour; laboratory: 2 hours.
ASTRONOMY

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

AUTOMOTIVE TECHNOLOGY

51 FUNDAMENTALS OF AUTO REPAIR (3)
   Designed for students who have had no formal shop experience or training.
   Successful completion of this course prepares students for Automotive
   Technology 54. Class: 1 hour; laboratory, 5 hours.

54 AUTOMOTIVE ENGINES (8)
   Prerequisite: High-school auto mechanics or equivalent.
   Design and theory of construction and operation of engines. Engine
   development and future power plants. Engine efficiency, horsepower,
   torque. Types of materials used and tolerances of component parts. Testing
   Shop operations. Basic trade and employment information and shop
   operation management. Class: 5 hours; laboratory: 10 hours.

55 AUTOMOTIVE CHASSIS UNITS (8)
   Prerequisite: High-school auto mechanics or Automotive Technology 54
   or equivalent.
   Theories of design and operation of chassis units affecting stability, power
   flow, suspension, steering, wheel alignment, differentials and rear axles,
   stick shift transmissions, chassis wiring, headlights, gauges and instrument
   panel servicing. Brakes. Automotive air conditioning. Includes testing,
   trouble diagnosis and servicing. Class: 5 hours; laboratory: 10 hours.

56 AUTOMOTIVE TUNE-UP (8)
   Prerequisite: Automotive Technology 55 or equivalent.
   Principles and theory of operation of electrical system components of
   automotive vehicles. Distributors, generators, starters, regulators, alternators.
   Testing. Trouble shooting. Theories of design and operation of fuel system
   components and ignition. Carburetors and distributor ignition. Techniques
   for trouble shooting and engine tune-up using advanced testing equipment
   including dynamometer and electronic testing work. Class: 5 hours; labora-
   tory: 10 hours.

57 AUTOMOTIVE TRANSMISSIONS (8)
   Prerequisite: Automotive Technology 56 or equivalent.
   Theories of design and operation of fluid couplings, torque convertors,
   automatic transmissions, and power-activated units. Testing, servicing and
   repairs. Class: 5 hours; laboratory: 10 hours.
61 ENGINE TUNE-UP AND TROUBLE DIAGNOSIS (3)
Prerequisite: Automotive Technology 54, or employment as an auto mechanic.
A comprehensive study of operation, tune-up and trouble diagnosis of gasoline engines. Principles and use of test and calibration equipment. Use of dynamometer (engine and chassis types) for testing and trouble shooting. Carburetion. Problems of engine malfunction. Laboratory: 6 hours.

62 AUTOMOTIVE TECHNOLOGY (TRANSMISSIONS) (3)
Prerequisites: Automotive Technology 54, or at least six months’ employment as an auto mechanic, or equivalent experience.
Automotive transmissions. The theory of operation and the repair of automatic transmissions. Operating principles of the automobile are reviewed. Procedures used by the commercial repair shop and the development of skill in automotive repair (wheel alignment, brakes and air conditioning). Class: 1 hour; laboratory, 5 hours.

BACTERIOLOGY
See Microbiology

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 approval 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 and principles of classification. 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 week-end field trip required.
31a, 31b SPECIAL PROJECT IN BIOLOGICAL SCIENCE (1-1)
32a, 32b SPECIAL PROJECT IN BIOLOGICAL SCIENCE (2-2)
33a, 33b SPECIAL PROJECT IN BIOLOGICAL SCIENCE (3-3)

Prerequisite: Approval of the instructor.
For the student who is capable and has the desire to explore and develop a project of his choice in biological science. Before registering for one of these courses, he must reach an agreement with the instructor concerning the intended limits and extent of the student's inquiry. Seminars, individual inquiry and selected reading.

57 BEGINNING MEDICAL TERMINOLOGY (3)
See Medical Secretary 57.

58 ADVANCED MEDICAL TERMINOLOGY (3)
See Medical Secretary 58.

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 approval 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)
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 minimum 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. Lecture-laboratory: 6 hours.

1b ELEMENTARY ACCOUNTING AND ACCOUNTING PRACTICE (4)
Prerequisite: Accounting 1a with minimum grade of C.
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. Lecture-laboratory: 6 hours.
ACCOUNTING BUSINESS ADMINISTRATION

2a INTERMEDIATE ACCOUNTING (3)
Prerequisite: Accounting 1b with minimum 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 minimum 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 lb with minimum 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) (Not offered 1967-1968)
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 (2)
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.

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; agency and employment; bailment contracts. Class: 3 hours.

18b BUSINESS LAW (3)
Prerequisite: Business Administration 18a.
Partnerships, corporations and business trusts; personal property; 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.

44 PRINCIPLES OF FINANCE (2)
Prerequisites: Accounting 1a, Business Administration 40, Business Administration 18a, Economics 1a or 57.
A study of the principles, institutions and instruments of financial management as they have been developed and are applied to any type of business enterprise or organized activity. Class: 2 hours.

46 LABOR RELATIONS (2)
(Formerly Business Administration 61)
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.

47 PRINCIPLES OF MARKETING (3)
(Formerly Business Administration 85)
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.
BUSINESS ENGLISH

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  COLLEGE SPELLING (2)
     A learn-to-spell program aiming for word mastery through a study of prefixes, suffixes, spelling rules, homonyms, heteronyms, and common spelling errors. The second half of the course reviews word lists from business, government, the sciences, humanities, fine arts, and useful arts. Class: 2 hours.
64 HUMAN RELATIONS IN BUSINESS (2)
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: 2 hours.

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)
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)
A rapid review of fundamental mathematical processes, fractions, percentages, interest, payrolls, taxes, and financial statements as they relate to actual business usage. For students working in bookkeeping, machine calculation, selling, personal finance, and other areas involving computations. Class: 3 hours.
104a, 104b OFFICE-Clerical Training (2-2)

Prerequisites: Enrollment in General Business 105a, 105b and approval of the instructor.

This course deals primarily with on-the-job problems of the student occupying supervised office-clerical work experience positions in bookkeeping, clerical and general business fields. It includes an introduction to the use of various types of machines in common use in business offices. Class: 2 hours.

105a, 105b Supervised Work Experience in Office-Clerical Training (2-2)

Prerequisites: Concurrent enrollment in General Business 104a, 104b and approval of the instructor.

Each student is required to occupy a work experience position in the general clerical, clerk-typist, bookkeeping, or general business 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.

MERCHANDISING

26 Salesmanship 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 (2)

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.

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 mark-down 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 HOME FURNISHING MERCHANDISING (2)
A comparative analysis of carpeting, furniture and related home furnishing merchandise, as well as leather goods, jewelry and other non-textile merchandise sold in the traditional department store. Special attention will be given to furniture stylings and the selling features of each. Class: 2 hours.

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

REAL ESTATE

See index for Real Estate and Escrow Certificate Requirements.

19 LEGAL ASPECTS OF REAL ESTATE (3)
Prerequisite: Real Estate 88a, a real estate license, or approval of the program chairman.
A study of California real estate law with emphasis on its application in the real estate brokerage and related fields. Satisfactory completion shortens broker's examination by 1½ hours. Class: 3 hours.

51 REAL ESTATE ECONOMICS (3)
(Formerly Trends and Factors Influencing Real Estate)
Prerequisite: Real Estate 88a, real estate license, or approval of the program chairman.
An intensive study of the factors which influence changes in real estate values. Class: 3 hours.

52 REAL ESTATE APPRAISAL (3)
Prerequisite: Real Estate 88a or approval of the program chairman.
An introductory course covering purposes of appraisals, the appraisal process, and the approaches, methods, and techniques used to determine the value of various types of property. Emphasis is on single-family residences. Class: 3 hours.

53a ESCROW PROCEDURES I (3)
Prerequisite: Ability to type well, and Real Estate 88a, or approval of program chairman.
Introductory study of and practice in the processing of escrows involving real estate — drawing of documents, prorating, title reports, legal and ethical responsibilities. Class: 3 hours.

53b ESCROW PROCEDURES II (3)
Prerequisite: Real Estate 53a or approval of program chairman.
The more unusual and difficult types of real estate escrows, with evaluation of solutions to problems. The case problem method of teaching is used extensively. Class: 3 hours.

53c ESCROW PROCEDURES III (3)
Prerequisite: Real Estate 53b or approval of the program chairman.
Intensive study of the most difficult problems faced by escrow offices, with particular attention to those in which disputes arise. Intended to qualify students as escrow officers. Class: 3 hours.

54 REAL ESTATE ESCROW PROCEDURES (1)
Prerequisite: Real Estate 88a or approval of program chairman.
Designed to enable real estate brokers and salesmen to understand the functions of escrow operations, the procedures of escrow offices, how to interpret escrow closing statements, and how to utilize the services of escrow firms to best advantage. Class: 3 hours for six weeks.
REAL ESTATE  SECRETARIAL SCIENCE

80  TAX FACTORS IN REAL ESTATE OPERATIONS (3)
Prerequisite: Real Estate 88a or 87, or approval of the program chairman.
Tax advantages and problems in ownership, management, and disposition
of real estate. Class: 3 hours.

86  RESIDENTIAL DESIGN AND CONSTRUCTION (2)
Study of architectural styles and trends, designs for attractiveness and
efficiency, construction quality and terminology, site selection and develop-
ment, remodeling possibilities and costs, mechanical equipment. Planned
primarily for real estate licensees, to familiarize them with the product with
which many deal. Class: 3 hours for 12 weeks.

87  REAL ESTATE INVESTMENT (2)
Designed to help the consumer attain an understanding of what real
estate offers in comparison with other types of investments, and some
knowledge of how to make, finance, manage, and change real estate invest-
ments advantageously. Class: 3 hours for 12 weeks.

88a  PRINCIPLES OF REAL ESTATE (3)
An introductory course for those interested in real estate as a vocation.
Covers basic laws, principles, and practices of California real estate; gives
understanding, background, and terminology necessary for advanced study
in specialized courses. Helps prepare for real estate salesman license exam-
ination. Class: 3 hours.

88b  REAL ESTATE PRACTICE (3)
Prerequisite: Real Estate 88a or approval of the program chairman.
Efficient methods of operation in real estate brokerage, with emphasis on
ethical practice. Class: 3 hours.

89  REAL ESTATE FINANCE (3)
Prerequisite: Real Estate 88a or approval of the program chairman.
Analysis of real estate financing, especially methods of financing resident-
tial and income properties from the standpoint of the real estate broker.
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. 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 busi-
ness letters, rough draft, and tabulation. Lecture-laboratory: 5 hours.
SECRETARIAL SCIENCE

4a ELEMENTARY SHORTHAND (5)
Prerequisite: Secretarial Science 3a or its equivalent. (May be taken concurrently.)
The basic principles of Gregg Shorthand, Diamond Jubilee series. 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. Lecture-laboratory: 5 hours.

4b INTERMEDIATE SHORTHAND (5)
Prerequisites: Secretarial Science 4a and Secretarial Science 3a or one year of high-school shorthand.
A continuation of the course in Gregg Dictation, Diamond Jubilee series, reviewing all principles set forth in Gregg Shorthand, Diamond Jubilee series. 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. Lecture-laboratory: 5 hours.

5 SECRETARIAL PROCEDURES (2)
Prerequisite: Secretarial Science 3b and 4b (or the equivalent) with a grade point average of 2.5 and competency in filing and spelling, or approval of the instructor.
Class work is devoted to the development of a secretarial personality, occupational intelligence, and techniques necessary for secretarial success. Basic office procedures and practices are discussed and evaluated. Class: 3 hours.

6 SPECIALIZED MACHINE TRANSCRIPTION (3)
(Formerly Secretarial Science 52c.)
Prerequisites: (1) For medical terminology: Medical Secretary 57 and Secretarial Science 53c. (2) For legal terminology: Secretarial Science 52a and 53c; Business Administration 18a. (3) For technical terminology: Secretarial Science 52a and 53c.
Designed to provide training in machine transcribing. Emphasis will be placed on increasing skills in business English; spelling; transcribing medical, legal, and technical terms; business letter writing; and specialized typing techniques. Class: 3 hours; laboratory: 1 hour.

51a, 51b ELEMENTARY SHORTHAND (3-3)
Prerequisite: Secretarial Science 3a. (May be taken concurrently.)
The basic principles of Gregg Shorthand, Diamond Jubilee series. 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.
INTERMEDIATE SHORTHAND (3-3)
Prerequisites: 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.

ADVANCED SHORTHAND (4)
Prerequisites: Secretarial Science 4a, 4b and Secretarial Science 3a, 3b, or two years of high-school shorthand and typing.
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.

ADVANCED SHORTHAND TRANSCRIPTION (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.

SPECIALIZED MACHINE TRANSCRIPTION (3)
(Not offered 1967-1968 — See Secretarial Science 6.)
Prerequisites: Medical Secretary 57 and Secretarial Science 52a.
Designed to give advanced shorthand students training in medical shorthand and machine transcription by applying these skills to common situations that occur in medical offices, clinics, laboratories, and hospitals. Class: 3 hours.

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.

ADVANCED TYPEWRITING TECHNIQUES (1)
Prerequisites: Secretarial Science 53c, or two 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.

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 3a. Laboratory: 3 hours.

73c INTERMEDIATE TYPEWRITING (1)
Prerequisite: Secretarial Science 3a, or 73a and 73b, or a speed of 30 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 SECRETARIAL 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 field. The course includes a study of employer-employee relationships, applying for a position, wage systems, retirement plans, social security, and unemployment insurance. Class: 1 hour.

103a, 103b SUPERVISED SECRETARIAL WORK EXPERIENCE (2-2)
Each student is required to occupy a work experience position in the secretarial field. Students work in a business office under the supervision of the employer and the instructor. The student's grade for supervised work experience is determined by the instructor and the employer. A minimum of 15 hours of employment per week at regular pay is required.
See index for Office-Clerical Training and Office-Clerical Work Experience.

STATISTICS
See Statistics listing

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.
CHEMISTRY

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 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)
(Not offered 1967-1968)
Prerequisite: Chemistry 5
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: 2 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 six weeks of the semester will be devoted to an introduction to qualitative organic analysis. Class: 1 hour; laboratory: 6 hours.

31A, 31B, 31C, 31D SPECIAL PROJECTS IN CHEMISTRY
(1-1-1-1)
Prerequisite: Chemistry 1b.
An introduction to instrumental techniques. A non-scheduled tutorial course to be given by arrangement with the individual instructor involved. Each phase includes assigned reading, discussion with the instructor and laboratory projects. The phases or divisions of the course are an introduction to: (A) spectroscopy (B) chromatography (C) optical methods of analysis and (D) glass working. Any phase is independent of the others and the course may be taken in any order. Class: arrange 16-18 hours from 3-5 daily.
CORRECTIONAL SCIENCE

10 INTRODUCTION TO CORRECTIONAL SCIENCE (3)
A survey of the historical, theoretical and philosophical explanations for criminal behavior. The functions and objectives of parole and probation. The judicial system and its relationship to the criminal offender as well as the modern approaches in the control of crime. Class: 3 hours.

12 FUNDAMENTALS OF CORRECTIONAL SUPERVISION (3)
A survey of the basic knowledge and skills required of a corrections worker: supervision of inmates, security procedures, enforcement of institutional rules and procedures, group counseling, and other policies and procedures relating to correctional supervision. Especially designed for the pre-service student and in-service personnel with less than one year of experience. Class: 3 hours.

14 BASIC INTERVIEWING AND COUNSELING (3)
A survey of the basic theories and techniques employed by the correctional worker in interviewing and counseling. Traces the development of a relationship between client and caseworker through the establishment of rapport, positive transference, and free communication within an interview setting. Explores various types of counseling within a correctional setting to enable the offender to comprehend the cause and effect relationship of his antisocial behavior. Class: 3 hours.

16 CONTEMPORARY TREATMENT CONCEPTS (3)
Prerequisite: Correctional Science 10 and 12 or one year of correctional work experience.
A survey of contemporary treatment methods for the offender. Included are probation, parole, institutional programs and specialized treatment, as well as group treatment and half-way house programs. Class: 3 hours.

18 LEGAL ASPECTS OF CORRECTIONS (3)
Legal aspects of corrections from conviction to release. Laws dealing with organization of state prisons, execution of sentences, terms of paroles and imprisonment, escapes, prison records, executive clemency, and city, county, federal and special correctional programs. Class: 3 hours.

22 FUNDAMENTALS OF PROBATION AND PAROLE (3)
A survey of the historical development of probation and parole, from early correctional procedures through modern approaches in both probation and parole. Specific emphasis will be placed on operation of probation and parole in the state of California. Class: 3 hours.

24 COMMUNITY AND AGENCY RELATIONSHIPS (3)
Various aspects of public relations and means of communication with the public. A study of cultural relationships of ethnic groups, improvement of attitudes toward the correctional program, the "prison preventers" program, relations with law enforcement and other government agencies and organizations, through advisory committees, character building organizations, job placement services and other groups. Class: 3 hours.
26 CRIMINOLOGY (3)
(Formerly Police Science 32)
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.

DATA PROCESSING

50 INTRODUCTION TO DATA PROCESSING (3)
A general introduction to the whole field of data processing, including punched card equipment and processes, and digital computer systems. Designed as the first course for students majoring in data processing or as a survey course for anyone with an interest in this field. Class: 3 hours; laboratory: 1 hour.

51 UNIT RECORD MACHINE WIRING (4)
Prerequisite: Data Processing 50 (may be taken concurrently).
General fundamentals of wiring unit record machines and specific details on the wiring of the reproducing punch, the collator, and the accounting machine to perform the various functions for which these machines are designed. Laboratory work includes wiring and operating these machines. Class: 3 hours; laboratory: 3 hours.

52 KEY PUNCHING (1)
Prerequisite: Typing speed of 40 words per minute. Data Processing 50 is recommended.
Designed to train those with sufficient aptitude and ability to become employable as key-punch operators. Laboratory: 3 hours.

61 COMPUTER PROGRAMMING I (4)
Prerequisite: Data Processing 50 with a C grade or better or equivalent and approval of the instructor.
An introduction to computer programming involving flowcharting, coding, and use of standard documentation. IBM 1401 Computer will be used for laboratory work. Class: 3 hours; laboratory, 3 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.
DENTAL ASSISTING

53a, 53b CHAIRSIDE PROCEDURES (5-5)
   Recommended preparation: High-school courses in science and mathematics.
   This course covers 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. Manipulative skills are stressed through individualized instruction. 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 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.
70 **ADVANCED DENTAL RADIOGRAPHY PROCEDURES (2)**
Prerequisite: One year of X-ray experience or approval 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.

**DRAFTING**

*Engineering Kinematics — See Engineering 26.*

1a **DRAFTING 1 BASIC TECHNIQUES (3)**
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 **DRAFTING — INTERMEDIATE (3)**
Prerequisites: Plane geometry and one year of high-school drafting or Drafting 1a.
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 intersections of surfaces; and the detailing of cast, forged, and machined parts. Class: 1 hour; laboratory: 5 hours.

3a **DRAFTING — ARCHITECTURAL APPLICATIONS (3)**
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 **DRAFTING — ARCHITECTURAL PERSPECTIVE (3)**
Prerequisite: Drafting 1a, or one year of high-school drafting and approval 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 **DRAFTING — ARCHITECTURAL-ENGINEERING APPLICATIONS (3)**
Prerequisites: Drafting 3a and Mathematics A or two years of high-school algebra.
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.
DRAFTING

51a DRAFTING — INDUSTRIAL APPLICATIONS (3)
Prerequisites: Drafting 1a and 1b, or two years of high-school drafting.
An exploratory course in the application of drawing to the various industrial fields. Problems of piping, machine drawing, including the theory and practice of dimensioning as used in various industries, sectioning, and detailing of fastenings, and gears. Drawing of detailed and assembled parts of machines. Class: 1 hour; laboratory: 5 hours.

51b DRAFTING — ADVANCED APPLICATIONS (3)
Prerequisites: Drafting 1a and 1b, or two years of high-school drafting.
An exploratory course in the application of drawing to the various industrial fields. Problems of jigs and fixtures, application of fasteners, manufacturing methods including patternmaking, casting forgings, extrusions, heat treating, mapping, structural drafting, and graphical representation. Class: 1 hour; laboratory: 5 hours.

52 DRAFTING — BASIC ILLUSTRATION (3)
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. 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 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.

56 DRAFTING — ELECTRONIC APPLICATIONS (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. Includes drawing of circuit board assemblies and art work for printed circuits. Class: 2 hours; laboratory: 4 hours.
58 DRAFTING — ELECTRONIC PACKAGING (3)
Prerequisite: Drafting 56 or equivalent in electronic experience and 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 connections and cabling diagrams. Class: 1 hour; laboratory: 5 hours.

59 TOPOGRAPHIC AND RIGHT-OF-WAY MAPPING (2)
Prerequisite: Employment in related field. Mathematics through intermediate algebra is recommended.
The fundamentals of topographic and right-of-way mapping as practiced and applied by private and public agencies, with reference to functionally related fields of surveying and title. Class: 2 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.

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. Laboratory: 3 hours.
ECONOMICS

1a PRINCIPLES OF ECONOMICS (3)
Prerequisite: Eligibility for English 1a.
The operation of the national economy ("macroeconomics"), — how it functions to solve the problems of unemployment, inflation, and economic growth. Class: 3 hours.

1b PRINCIPLES OF ECONOMICS (3)
Prerequisite: Eligibility for English 1a. Economics 1a is not a prerequisite for Economics 1b, although it is strongly recommended.
An examination of how business firms maximize profits ("microeconomics"). Includes a review of problem areas involving farmers, labor unions, monopolies, and international relations. 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.

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)
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, or approval of the instructor.
A practical course on the application of the many types of electrical equip-
ment and control. Emphasis on improved maintenance, trouble shooting and
utilization of heavy industrial electrical equipment. Class: 2 hours; labora-
tory: 4 hours.

54a, 54b INDUSTRIAL ELECTRICAL DIAGRAMS (3-3)
A practical course in the interpretation of electrical diagrams. ASA device
function numbers and symbols, single line, schematic, wiring, elementary
diagrams and instruments commonly found in industrial process control.
Electricity 54b includes magnetic controllers, power circuit breakers, AC
and DC ground detectors, AC circuit analysis, DC circuit analysis, and
power line protection. Class: 3 hours.

ELECTRONICS

Electronics 57ab, 58ab, 59ab may be divided in the evening classes. Approx-
imately 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.
ELECTRONICS

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 semiconductor 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 troubleshooting methods using a variety of commercial test equipment found in industrial laboratories. Class: 6 hours; laboratory: 9 hours.

67 BASIC ELECTRONICS TECHNOLOGY I (9)
Prerequisite: Electronics 50 and 56 or equivalent.
The fundamentals of AC and DC electricity at a reduced mathematical level. The course covers the theoretical concepts involved as well as the practical application of the knowledge in the laboratory. Class: 5 hours; laboratory-lecture: 2 hours; laboratory: 8 hours.

68 BASIC ELECTRONICS TECHNOLOGY II (9)
Prerequisite: Electronics 67 or equivalent.
The fundamentals of vacuum tubes and semiconductors at a reduced mathematical level, and an application of this knowledge to an understanding of basic electronics circuits. The course covers the theoretical concepts involved and stresses practical application of the knowledge in the laboratory. Class: 5 hours; laboratory-lecture: 2 hours; laboratory: 8 hours.

69 BASIC ELECTRONICS TECHNOLOGY III (9)
Prerequisite: Electronics 68 or equivalent.
A course covering some advanced concepts of electronics circuits and the fundamentals of various electronic systems. Extensive laboratory practice in the building and testing of a variety of electronic circuits and systems. Class: 5 hours; laboratory-lecture: 2 hours; laboratory: 8 hours.
71a, 71b SPECIAL PROJECTS IN ELECTRONICS (1-1)

72a, 72b SPECIAL PROJECTS IN ELECTRONICS (2-2)
Prerequisites: Electronics 57 and 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 58ab or equivalent.
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 to demonstrate how a digital computer performs the basic arithmetic processes. Class: 3 hours; laboratory: 3 hours.

80 TELEPHONE ELECTRONICS (3)
Review of electrical theory, telephone symbols, meters, development of telephone circuit exchange, layout trouble-shooting, telephone transmission theory, automatic switching, study of circuit drawings, vacuum tubes and carrier systems. Class: 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 semi-conductor 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.

99a, 99b CODE PRACTICE (1-1)

(Formerly Electronics 69a, 69b)

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

25a ENGINEERING GRAPHICS (3)

Prerequisites: Plane geometry and one year of high-school mechanical drawing or plane geometry and Drafting 1a.

Descriptive geometry; the fundamental principles of orthogonal projection and graphical solutions of typical space problems. Class: 1 hour; laboratory: 6 hours.
25b ENGINEERING GRAPHICS (3)

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 detailed drafting. The determination of empirical equations from experimental data. 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.

55 SURVEYING AND CALCULATIONS FOR FIELD SURVEYORS (3)

Prerequisite: Employment in professional engineering or related areas.

Designed to assist transitmen and others to strengthen their surveying theory and calculations, the course will start with a review of right triangle trigonometry. Class: 3 hours.

ENGLISH

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

1a COMPOSITION (3)

Prerequisite: Satisfactory score on English placement test or grade C or better in English 91a or 91b.

The careful study and practice of writing techniques, 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 approval of the instructor.

An intensive course in writing based upon the reading and 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.
   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 approval 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 approval 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 approval 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 approval 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 approval 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 approval 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.
ENGLISH

34d  THE SHORT STORY (3)
Prerequisite: English 1a, or approval 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.

34e  DRAMATIC LITERATURE (3)
Prerequisite: English 1a, or approval 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 1a and 1b or approval 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.

38  SPECIAL PROJECTS IN LITERATURE (2)
Prerequisite: Approval of the instructor.
Designed for the capable, well-motivated student. Each student explores and develops a literary project of his own. Student-instructor agreement as to the nature and extent of the project must be reached before the student may sign up for the course. Class: 2 hours.

60  COMMUNICATION SKILLS (3)
A communications course stressing oral and written language skills. It is designed specifically for non-transfer and other students who may not wish to include the more academic remedial and transfer English in their general education courses. 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)
The study of report writing procedures and the development of skills in organizing and writing different types of reports, as well as practice in improving one's handling of words, sentences, and paragraphs. Emphasis is on clarity of communication. Class: 3 hours.

65  POLICE REPORT WRITING (3)
Prerequisite: Employment as a Police Officer or enrollment in Police Science.
Gathering, arranging, examining, interpreting, and recording of facts into complete reports of incidents. Class: 3 hours.
91a. FUNDAMENTALS OF COMPOSITION (3)
Not open to students who have taken Business English 53a with a minimum 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 at least a C 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 C grade. Class: 3 hours.

95. IMPROVEMENT OF READING (2)
A remedial course designed to increase comprehension, vocabulary and reading speed. Class: 2 hours.

98. VOCABULARY BUILDING (2)
Training and exercise in developing a usable and practical vocabulary for everyday communication. Class: 2 hours.

FIRE SCIENCE

12. INTRODUCTION TO FIRE PROTECTION (3)
Philosophy and history of fire protection; history of loss of life and property by fire; municipal fire defenses; the organization and function of Federal, State, County, and private fire protection agencies; professional fire protection career opportunities. Class: 3 hours.

14. INTRODUCTION TO FIRE SUPPRESSION (3)
Fire suppression organization; fire suppression equipment; characteristics and behavior of fire; fire hazard properties of ordinary materials; building design and construction; extinguishing agents; basic fire fighting tactics; public relations. Class: 3 hours.

20. FUNDAMENTALS OF FIRE PREVENTION (3)
Prerequisites: Fire Science 12 and 14 or one year of experience as a fireman and pass qualifying examination.
Organization and function of the fire prevention organization; inspection; surveying and mapping procedures; recognition of fire hazards; engineering a solution for the hazard; enforcement of the solution; public relations as affected by fire prevention. Class: 3 hours.
22 FIRE FIGHTING TACTICS AND STRATEGY (3)
Prerequisites: Fire Science 12 and 13 or one year of experience as a fireman and pass qualifying examination.
Review of fire chemistry, equipment, and manpower; basic fire fighting tactics and strategy; methods of attack; preplanning fire problems. Class: 3 hours.

23 FIRE COMPANY ORGANIZATION AND PROCEDURE (3)
(Formerly Fire Science 35)
Prerequisites: Fire Science 12 and 14 or one year of experience as a fireman and pass qualifying examination.
Review of fire department organization; fire company organization; the company officer; personnel administration; communications; fire equipment maintenance; training; fire prevention; fire fighting; company fire fighting capability; records and reports. Class: 3 hours.

25 FIRE HYdraulics (3)
(Formerly Fire Science 31)
Prerequisites: Fire Science 12 and 14 or one year of experience as a fireman and pass qualifying examination.
Review of basic mathematics; hydraulic laws and formulas as applied to the fire service; application of formulas and mental calculation to hydraulic problems; water supply problem; Underwriters requirements for pumps. Class: 3 hours.

26 FIRE PROTECTION EQUIPMENT AND SYSTEMS (2)
Prerequisites: Fire Science 12 and 14 or one year of experience as a fireman and pass qualifying examination.
Portable fire extinguishing equipment; sprinkler systems; protection systems for special hazards; fire alarm and detection systems. Class: 2 hours.

27 FIRE APPARATUS AND EQUIPMENT (3)
Driving laws, driving technique, construction and operation of pumping engines, ladder trucks, aerial platforms, specialized equipment, apparatus maintenance. Class: 3 hours.

28 RELATED CODES AND MAINTENANCES (3)
Prerequisite: Fire Science 20.
Familiarization with national, state, and local laws and ordinances which influence the field of fire prevention. Class: 3 hours.

29 RESCUE PRACTICES (3)
Prerequisites: Fire Science 12 and 14 or one year of experience as a fireman and pass qualifying examination.
Rescue practices, the human body, emergency care of victims, childbirth, artificial respiration, toxic gases, chemicals and diseases, radioactive hazards. Class: 3 hours.
33 BUILDING CONSTRUCTION FOR FIRE PROTECTION (2)
Prerequisites: Fire Science 12 and 14 or one year of experience as a fireman and pass qualifying examination.
Fundamental building construction and design; fire protection features; special considerations. Class: 2 hours.

34 HAZARDOUS MATERIALS I (3)
(Formerly Fire Science 24)
Prerequisites: Fire Science 12 and 14 or one year of experience as a fireman and pass qualifying examination.
Review of basic chemistry, storage, handling, laws, standards and fire fighting practices pertaining to hazardous materials. Class: 3 hours.

36 HAZARDOUS MATERIALS II (3)
Prerequisite: Fire Science 34.
Fire fighting practices pertaining to hazardous solids, liquids and gasses. Study of the properties of new hazardous materials which are being developed in industry. Class: 3 hours.

38 FIRE INVESTIGATION (3)
Prerequisite: Fire Science 28.
Introduction to arson and incendiary fires. Methods of determining fire cause, recognizing and preserving evidence, interviewing and detaining witnesses. Procedures in handling juveniles; court procedure and giving court testimony. Class: 3 hours.

50 BASIC TRAINING (ACADEMY) (6)
Prerequisite: Employment in the fire service.
Organization of the public fire service; characteristics and behavior of fire; fire hazard properties of materials; extinguishing agents; extinguishing equipment; fire protection systems; building construction and assemblies; water supply; basic fire fighting tactics; fire prevention, public relations, and first aid. Class: 8 hours per day, 3 days per week for 6 weeks.

FOOD SERVICE

56 BASIC NUTRITION (2)
Dietary needs of children and youth; the role in nutrition of protein, fats, carbohydrates, minerals and vitamins; factors to be considered in developing good food habits. Class: 2 hours.

60 MENU PLANNING (2)
Prerequisite: Employment in a school lunch kitchen or equivalent program.
The basic factors included in planning menus based on the Type A lunch pattern; planning to make the Type A lunch attractive. Class: 2 hours.
62 SANITATION AND SAFETY (1)
Personal cleanliness; sanitary practices in food preparation; cause, control and investigation of illnesses caused by food contamination; dishwashing, storage and refrigeration; sanitation of kitchen and equipment; cleansing materials, garbage and refuse disposal; safety precautions and training for accident prevention. Class: 2 hours (9-week course).

64 FOOD PURCHASING (2)
Prerequisites: Food Service 56 and Food Service 60.
Method of buying; quantity selection, standards and grades; factors influencing prices. Class: 2 hours.

66 QUANTITY FOOD PREPARATION (2)
Prerequisites: Food Service 56 and Food Service 60.
Methods of quantity food preparation which retain nutritive values; use of standard recipe file; use of weights and measures; use of equipment; timing, selection, preparation, display, and serving of foods. Class: 2 hours.

68 SCHOOL LUNCH MANAGEMENT (2)
Prerequisites: Food Service 56, 60, Supervision 58 or equivalent, and one year of school lunch experience.
Analysis of the duties and responsibilities of a school lunch manager and supervisor. Application of the principles of organization and administration as they relate to the school lunch program. Food costing, financial reports, state and local food reports, personnel work schedules. Class: 2 hours.

70 FOOD PREPARATION I (3)
Basic hot and cold sauces and dressings, the preparation, formulas, seasonings and uses of each. Use of temperature charts in roasting, basting and cooking. Weight and measure charts, common can sizes and units of commercial measure. Class: 3 hours.

72 FOOD PREPARATION II (3)
Preparation of fresh fruits and salads, and their special care, sandwich making and fillings. Sources and procurement of basic raw materials used in commercial food production. Field trips to produce and wholesale purveyors. Class: 3 hours.

74 FOOD PREPARATION III (3)
Meat identification, meat buying, including selection, grading and stamps. Basic types of meat cookery, and the nutritive value of meats. Care of fresh, cooked and frozen meat and the preserving of meat. Class: 3 hours.

FRENCH

1, 2 ELEMENTARY FRENCH (4-4)
Prerequisite for French 2: French 1, or two years of high-school French and approval of the instructor.
An intensive, methodical presentation to develop facility in the skills of listening 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: 1 hour.
3, 4 INTERMEDIATE FRENCH (4-4)
Prerequisite for French 3: French 2, or three years of high-school French and approval of the instructor. Prerequisite for French 4: French 3, or four years of high-school French and approval of the instructor.
Grammatical structures of more complex nature. Reading selections of increasing challenge. Continued activity in 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 1 hour.

38a, 38b SEMINAR IN FRENCH (2-2)
Prerequisite: Completion of French 4 or equivalent.
For advanced students capable of functioning entirely in the foreign language, concentrating on advanced work in the mechanics of the language and various aspects of French daily life and culture. Class: 2 hours.

51a, 51b, 51c, 51d CONVERSATIONAL FRENCH (2-2-2-2)
An elementary course in conversational French. This course is not designed to meet the academic requirements for transfer students. Class: 4 hours.

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.
2 DETERMINATIVE MINERALOGY (2)
Prerequisite: High-school chemistry or Geology 1a or approval of the 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.

4 HAND SPECIMEN PETROLOGY (4)
Prerequisite: Physical or historical geology or mineralogy.
A study of the origin, characteristics and classification of rocks; the processes of rock formation and alteration; use of hand lens in rock identification. Field trips are required. Class: lecture, 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 and approval of the instructor.
Basic grammar; elementary reading, writing, and conversation. The foreign language laboratory is utilized for regular pronunciation drill and the acquisition of speech patterns. Class: 5 hours; laboratory: 1 hour.

3, 4 INTERMEDIATE GERMAN (4-4)
Prerequisite for German 3: German 2 or three years of high-school German and approval of the instructor. Prerequisite for German 4: German 3 or four years of high-school German and approval of the instructor.
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. Rapid reading of a modern play. 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: 1 hour.

10 GERMAN CONVERSATION (2)
Prerequisite: German 2 or equivalent.
Practice in the patterns of natural German speech through dialogs which lead to extemporary conversation. Class: 2 hours.

HISTORY

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.
HISTORY

8a, 8b HISTORY OF THE AMERICAS (3)
Prerequisite: Eligibility for English 1a. History 8a is not prerequisite to 8b.
A survey of the development of the Western Hemisphere from its discovery to the present. The first semester concentrates on the evolution of the Colonial Americas; the second semester deals with the development of the Americas in the nineteenth and twentieth centuries. This year course satisfies the United States History, Constitution, state and local government requirements. (See graduation requirements.) 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. This course gives credit for American History and U.S. Constitution requirement, including state and local government. (See graduation requirements.) Class: 3 hours.

19a, 19b HISTORY OF ASIAN CIVILIZATION (3-3)
Prerequisite: Eligibility for English 1a or approval of the instructor.
The cultural foundations of Asian nations and people, especially China, Japan, and India. The first semester traces Asian development from earliest times to the beginning of Western influences in Asia. The second semester treats the Western impact on Asia, with particular emphasis on the tensions between traditional Asian institutions and the economic and political changes of the nineteenth and twentieth centuries. 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

Home Economics 21-30 — See Art.
Home Economics 56-66 — See Food Service.

1a FOODS (3)
Planned primarily for everyday living. Foods for the family, food principles, and methods of preparation, meal planning and serving. 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 (2)
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.

2a, 2b CLOTHING (3)
Principles of garment construction. Efficient use of commercial patterns, materials and equipment; planning and organization for work simplification. Practical problems based on the abilities and experience of students. Home Economics 2b develops sewing skills. Class: 1 hour; laboratory: 5 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 of varying positions and income. Class: 2 hours.

5b HOME MANAGEMENT (2)
Evaluation and study of organization of household practices; study of family resources and expenditures; family objectives and how to achieve them. 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. Students who have completed Home Economics 1c are not eligible for Home Economics 10. Class: 2 hours.

15a CRAFTS (1)
This course is the same as Art 15a.
An introduction to problems in water color, yarn stitching, piñata making, and stained glass windows. Suggested for students preparing to become elementary teachers. Laboratory: 3 hours.

15b CRAFTS (1)
This course is the same as Art 15b.
An introduction to problems concerning cut-paper projects, mosaics, papier-mâché, weaving in paper and yarn, and printing. 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.

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.

55 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)

(Not offered 1967-1968)

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)

Prerequisites: Lithography 1a, 1b and 2a, 2b. The latter may be taken concurrently.

Additional instruction and experience in lithography. Class: 1 hour; laboratory: 6 hours.

71a, 71b COMMERCIAL LITHOGRAPHY (2-2)

Prerequisite: Printing trade background.

Instruction in the theory and practical experience in the manipulative skills of offset printing including copy preparation, camera work, stripping and platemaking. Class: 1 hour; laboratory: 2 hours.
MATHEMATICS

Business Mathematics — See General Business 78.

A INTERMEDIATE ALGEBRA (5)
Prerequisite: One year of high-school algebra and plane geometry with minimum grades of C.
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, inequalities, and rational integral equations. 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 minimum grade of C is required.
The theory of trigonometry with emphasis on the analytical aspects needed in analytical 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.

2 MATHEMATICS OF FINANCE (3)
Prerequisites: Two years of high-school algebra or Mathematics A.
Simple and compound interest, annuities, amortization and sinking funds, and bonds. Class: 3 hours.
NOTE: Chaffey College offers two different mathematics sequences for engineering students:
1. The accelerated sequence presupposes that the student has already had Math 3a or analytic geometry in high school. Beginning immediately with calculus, it covers the traditional topics in the first year in Math 12a (5 units) and Math 12b (5 units).
   In the second year 14ab (4 units) covers certain topics from advanced calculus, and differential equations; and Math 18 (4 units) is devoted to linear algebra. This sequence should meet the lower-division mathematics requirements at almost any college or university.
2. The standard sequence covers analytic geometry in the first semester and then in the next three semesters devotes 12 units to the traditional calculus topics. This sequence is satisfactory for transfer to many colleges. At this point, should the student wish, he can now take Math
14ab and Math 18 in a third year at Chaffey College.
In any event, the student should study the curriculum listed in the
catalog of the institution to which he plans to transfer. Physics and
Math majors should complete the accelerated program if possible.

3a PLANE ANALYTICAL GEOMETRY (3)
Prerequisite: Trigonometry with a minimum grade of C.
A study of rectangular and polar coordinates, focus problems, conic
sections, algebraic and transcendental curves, parametric equations and
families of curves. The fall section includes an introduction to calculus, thus
providing a closer articulation with Mathematics 3b and Physics 4a. Class:
3 hours.

3b FIRST COURSE IN CALCULUS (4)
Prerequisite: Analytic geometry with a minimum grade of C.
Differentiation and integration of algebraic and transcendental functions
with applications to problems of physics and engineering. Class: 4 hours.

4a SECOND COURSE IN CALCULUS (4)
Prerequisite: Mathematics 3b with a minimum grade of C.
Formal integration by various devices, theorem of mean value, indeter-
minate forms, polar coordinates, infinite series, expansion of functions,
vectors and vector algebra. Class: 4 hours.

4b THIRD COURSE IN CALCULUS (4)
Prerequisite: Mathematics 4a.
Solid analytic geometry with vectors, partial differentiation, multiple
integrals and ordinary differential equations; applications to scientific and
engineering problems. Class: 4 hours.

10 FUNDAMENTAL CONCEPTS OF ELEMENTARY
MATHEMATICS (3)
Prerequisites: Mathematics 91, Mathematics 92.
Designed primarily for prospective elementary school teachers. A study
of number systems to any base, modular arithmetic, inequalities, rational and
irrational numbers, set theory, and basic concepts of algebra, geometry and
trigonometry. Class: 3 hours.

12a CALCULUS I (5)
Prerequisites: Analytic geometry with a minimum grade of C. Pass qual-
ifying examination in algebra, trigonometry and analytic geometry.
Introduction to differential and integral calculus with vectors, and appli-
cations. Class: 5 hours.

12b CALCULUS II (5)
Prerequisite: Mathematics 12a with a minimum grade of C.
A continuation of Mathematics 12a, including the study of vectors and
solid analytic geometry, partial differentiation, multiple integrals and dif-
ferential equations, with applications to engineering and physics. Class: 5
hours.
MATHEMATICS

14ab ADVANCED ENGINEERING MATHEMATICS (4)
Prerequisite: Mathematics 4b, or Mathematics 12b.
This one-semester course is primarily for engineering students. It includes
infinite series, Fourier series, partial differentiation, line integrals, elementary
vector analysis, Green's theorems, complex numbers, and differential
equations, with application to the field of physics and mechanics. Class:
4 hours.

18 LINEAR ALGEBRA (4)
Prerequisite: Mathematics 14ab, or approval of the instructor.
Groups, rings and fields; determinants and matrices, vector spaces and
linear transformations, isomorphisms eigenvalues and eigenvectors. 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, propor-
tion, squares and cubes of numbers, and their square roots and cube
roots. Required for Chemistry 1a, Physics 10, and Physics 2a, 2b. Recom-
manded 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 func-

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 equa-
tions, 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

(Medical Secretarial Certificate program — see index.)

55 BEGINNING MEDICAL OFFICE PROCEDURES (3)
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)
Prerequisite: Completion of Medical Secretary 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)
This course is the same as Biology 57.
A course designed to familiarize those in, or related to, the medical field with 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)
This course is the same as Biology 58.
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.

MICROBIOLOGY

1 GENERAL MICROBIOLOGY (4)
An introductory microbiology (bacteriology) course for majors and non-majors in bacteriology and/or related sciences. Includes general morphology, taxonomy, and physiology, of bacteria and related organisms (viruses, fungi, etc.) together with bacteriology of soil, air, water, foods, pathogenes, immunology, and disinfectants. Class: 2 hours; laboratory: 6 hours.

31 MICROBIOLOGY SEMINAR (1)
Prerequisite: Microbiology 1.
Lectures and student reports on the various newer aspects of immunology, virology, bacteriology, and pathogenes. Class: 1 hour.
1a, 1b MUSICIANSHP (3-3)
Prerequisite: Elementary knowledge of notation and concurrent enrollment 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 emphasized. Class: 3 hours; laboratory: 1 hour.

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 approval of the 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)
Prerequisite: Approval of the instructor.
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.)
MUSIC

9a, 9b, 9c, 9d  MEN'S GLEE CLUB (2-2-2-2)
   Prerequisite: Approval of the instructor.
   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 re-
   quired. Class: 5 hours. (2 hours in combined rehearsal with Women's Glee
   Club.)

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: Approval of the 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 instru-
   ments may be made through the department. Class: 2 hours.

16a, 16b, 16c, 16d  CONCERT CHOIR (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 representative
   works of American, English, Italian, German, French, and Russian com-
   posers. 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 sample
   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: Approval of the instructor.
   Study and performance of classic and modern string ensemble repertoire.
   Open only to advanced string instrument players. For those who do not have
   their own instruments, arrangements for securing instruments may be made
   through the department. Class: 3 hours.
MUSIC

19a, 19b, 19c, 19d WOODWIND ENSEMBLE (1-1-1-1)
Prerequisite: Approval of the instructor.
Study and performance of classic and modern compositions and transcriptions 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 department. Class: 3 hours.

20a, 20b, 20c, 20d BRASS ENSEMBLE (1-1-1-1)
Prerequisite: Approval of the 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 department. 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 approval 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 instrumentation. 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 activities and concerts.
Spring Semester: 3 hours class; laboratory, 1 hour plus performances at concerts and a limited number of school activities.
47a, 47b, 47c, 47d STAGE BAND (1-1-1-1)
Prerequisite: Approval of the instructor.
Designed for the student desiring to enter the fields of professional dance music, radio or theater orchestra work. Opportunity is provided for practical experience in organizing instrumental combinations of all kinds and sizes. Class: 3 hours.

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.

58a, 58b, 58c, 58d COLLEGE CHORALE (1-1-1-1)
Choral singing for personal enjoyment, the improvement of musicianship and note reading; the improvement of voice production. Material chosen from baroque, classic, romantic and popular fields of music. Class: 3 hours.

90 BASIC MUSIC MATERIALS (2)
Provides the music background normally expected of one enrolling in Music 1a. This course will also help the non-music major to gain some knowledge of the basic elements of music theory. Class: 3 hours.

NURSING
PROFESSIONAL NURSING

1 FUNDAMENTALS OF NURSING (6)
Prerequisite: English 1a, Psychology 1a and admission to the major in Nursing.
A study and application of those principles which are basic to all nursing. The evolution of nursing as it affects the role and responsibilities of the nurse today. Class: 3 hours; laboratory: 9 hours.

2 FUNDAMENTALS OF NURSING (7)
Prerequisites: Successful completion of Anatomy 1 and/or Microbiology 1; Physiology 1 and Nursing 1 or approval of the instructor.
Application of basic nursing principles to the care of patients with medical-surgical nursing problems including the nature, use, and administration of pharmacological agents and the nurse's legal responsibility. Class: 4 hours; laboratory: 9 hours.
VOCATIONAL NURSING

3 FUNDAMENTALS OF NURSING (4)
Prerequisites: Psychology 1a and Nursing 1 or approval of the instructor.
The study and application of basic mental health concepts and principles
to the care of the mentally ill. Class: 2 hours; laboratory: 6 hours.

4 FUNDAMENTALS OF NURSING (9)
Prerequisites: Psychology 1b and Nursing 1-3 or approval of the
instructor.
Maternal and child nursing based on the concept of the family as a unit
with laboratory experience in community health agencies as well as in
obstetrical and pediatric units of hospitals. Class: 3 hours; laboratory: 18
hours.

5 FUNDAMENTALS OF NURSING (10)
Prerequisites: Psychology 1a, Sociology 1a, and Nursing 1 through 4.
The presentation of complex medical-surgical nursing problems and their
application in the care of patients. Class: 3 hours; laboratory: 21 hours.

6 FUNDAMENTALS OF NURSING (1)
Concurrent requirement: Nursing 5.
Preparation for the change in role from student to practitioner of nursing.
Class: 1 hour.

20 R.N. REFRESHER (3)
Prerequisite: The student must be a Registered Nurse.
A course designed for the inactive Registered Nurse to augment and
bring up to date her skills and learnings. Class: 3 hours; laboratory: 16
hours.

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 responsi-
bilities. 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: 8 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. Study of
nutritional, medicinal, and physical needs of the various 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: 8 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: 22 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: 22 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 (2)
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

3 LOGIC (3)
Prerequisite: Eligibility for English 1a.
Introduction to and analysis and criticism of inductive and deductive reasoning. The relationship between logic and language. Study of definition, verification, evidence, validity, truth, and fallacious argument in all areas of inquiry as they apply to communication, science and daily life. Class: 3 hours.
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.

10  WORLD RELIGIONS (3)

Prerequisite: Eligibility for English 1a or approval of the instructor.

A presentation of the distinctive features of Judaism, Zoroastrianism, Islam, Christianity, Confucianism, Taoism, Shinto, Hinduism, Jainism, Sikhism and Buddhism. The purpose of the course is to give the student an understanding of the world’s great religions and an appreciation of the contributions of religion to our cultural heritage. Class: 3 hours.

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 neuromuscular 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.

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.
PHYSICAL EDUCATION

**ACTIVITY COURSES FOR MEN:**

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<tr>
<th>Class</th>
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<tr>
<td>1</td>
<td>a, b, c, d General Activities</td>
<td>10</td>
<td>a, b, c, d Wrestling</td>
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<tr>
<td>2</td>
<td>a, b, c, d College Recreation</td>
<td>12</td>
<td>a, b, c, d Bowling</td>
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<td>Association (coed)</td>
<td>13</td>
<td>a, b, c, d Gymnastics</td>
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<td>3</td>
<td>a, b, c, d Trampoline</td>
<td>14</td>
<td>a, b, c, d Badminton</td>
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<td>4</td>
<td>a, b, c, d Swimming</td>
<td>15</td>
<td>a, b, c, d Squash and</td>
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<td>5</td>
<td>a, b, c, d Basketball</td>
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<td>Country Dancing</td>
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<td>6</td>
<td>a, b, c, d Tumbling</td>
<td>16</td>
<td>a, b, c, d Body Building</td>
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<tr>
<td>7</td>
<td>a, b, c, d Tennis</td>
<td>17</td>
<td>a, b, c, d Modern Dancing</td>
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<tr>
<td>8</td>
<td>a, b, c, d Golf</td>
<td>18</td>
<td>a, b, c, d Social Dancing</td>
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<tr>
<td>9</td>
<td>a, b, c, d Handball</td>
<td>19</td>
<td>a, b, c, d Archery</td>
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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.

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: 2 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 men physical education majors. Class: 1 hour; laboratory: 3 hours.
26 FIRST AID (2)
The purpose is to impart 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 I (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 II (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 40 a, b, c Wrestling
35 a, b, c Basketball 41 a, b, c Football
36 a, b, c Water Polo 45 a, b, c Track
37 a, b, c Tennis 46 a, b, c Cross Country
38 a, b, c Golf 47 a, b, c Intra-mural
39 a, b, c Baseball

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: Physical Education 24 or 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:
1 a, b, c, d General Activities 12 a, b, c, d Bowling
2 a, b, c, d College Recreation Assn. 13 a, b, c, d Gymnastics (Apparatus)
3 a, b, c, d Trampoline 14 a, b, c, d Badminton
4 a, b, c, d Swimming 15 a, b, c, d Square and Country Dancing
5 a, b, c, d Basketball 6 a, b, c, d Body Building
7 a, b, c, d Tennis 17 a, b, c, d Modern Dancing
8 a, b, c, d Golf 18 a, b, c, d Social Dancing
11 a, b, c, d Body Mechanics Fundamentals 19 a, b, c, d Archery

Each class: 2 hours for ½ unit.

PHYSICAL EDUCATION
PHYSICAL EDUCATION

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: 2 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 impart 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.

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: Physical Education 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 3a or Mathematics 12a, and Mathematics 3b or Mathematics 12b (which 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)
Prerequisites: Physics 4a, Mathematics 3b.

Electricity and magnetism. Required for students whose major subject is physics, chemistry or engineering. Class: 3 hours; laboratory: 3 hours.

4c ENGINEERING PHYSICS (4)
Prerequisites: Physics 4a, Mathematics 3b.

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.

In 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)
The philosophy and history of law enforcement; overview of crime and police problems; organization and jurisdiction of local, State, and Federal law enforcement agencies; survey of professional career opportunities and qualifications required. Class: 3 hours.

11 ADMINISTRATION OF JUSTICE (3)
Review of court systems; procedures from incident to final disposition; principles of constitutional, Federal, State, and civil laws as they apply to and affect law enforcement. Class: 3 hours.

21 CRIMINAL LAW (3)
Elements of criminal law. Definitions and general penalties for felonies and misdemeanors with an emphasis on the California Penal Code. Includes a study of Federal law, other state codes, county and city ordinances, and judicial interpretations thereof. Class: 3 hours.

24 CRIMINAL EVIDENCE (3)
The kinds and degrees of evidence and the rules governing the admissibility of evidence in criminal cases. Includes a study of the origin, development and philosophy of rules of evidence; tests of admissibility; weight and value of types of evidence such as: hearsay, confessions, character, search and seizure, effect of arrest, entrapment, informants, wire tapping, lie detector, and opinion testimony. Class: 3 hours.

25 PATROL PROCEDURES (3)
Techniques of patrol, observation and description; handling complaints and called-for services; mechanics of arrest and incarceration; techniques of field interviewing; officer's notebook procedure; and essentials of police report writing for patrolmen. Includes practical exercises and demonstrations in searching prisoners, duties at crime scene, preliminary investigations, surveillances, and raids. Class: 3 hours.
26 CRIMINAL INVESTIGATION (3)

Fundamentals of investigation; crime scene search and recording; collection and preservation of physical evidence; scientific aids; modus operandi; sources of information; interviews and interrogations; follow-up and case preparation. Class: 3 hours.

27 TRAFFIC CONTROL (3)

Techniques of traffic law enforcement; traffic regulation accident investigation; traffic education and engineering; traffic direction; pedestrian, intersection, and parking control; traffic analysis and records; and traffic court procedures. Class: 3 hours.

28 JUVENILE PROCEDURES (3)

The organization, functions, and jurisdiction of juvenile agencies; the processing and detection of juveniles; juvenile case disposition; juvenile status and court procedures. 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.

Protection against persons armed with dangerous and deadly weapons; demonstration and drill in a limited number of holds and come-alongs; restraint of prisoners and the mentally-ill; fundamental use of the baton. The moral aspects, legal provisions, safety precautions and restrictions covering the use of firearms, firing of the firearm and shotgun. The immediate and temporary care given in case of accident, illness, and emergency childbirth. Qualifies students for the standard or advanced Red Cross First Aid Certificate. Class: 3 hours.

30 VICE CONTROL (3)

Prerequisite: One year of basic law enforcement or one year of police work.


31 POLICE MANAGEMENT (3)

Prerequisite: Police Science 36, or Supervision 51, or approval of the instructor.

Survey of middle management in a police agency. Includes a study of planning, organizing, staffing, training, equipping, budgeting, public information, recording and control factors in law enforcement agencies: Class: 3 hours.

32 CRIMINOLOGY (3)


33 VEHICLE CODE (3)

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 approval of the 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)
    Prerequisite: 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 moulding; questioned documents; ballistics and explosives; court presentation and expert witness. Class: 3 hours: laboratory: 3 field trips.

50 AUXILIARY LAW ENFORCEMENT (11/2)
    To provide the basic skills and an understanding of the forces needed in emergencies. Course covers the role of the police department in shelter programs; civil government; departmental rules and regulations; traffic control; geography of the area; laws of arrest, search and seizure; police communications; care and maintenance of firearms and equipment. Class: 3 hours per week for 1/2 semester.
POLICE SCIENCE  POLITICAL SCIENCE

52 ADVANCED AUXILIARY LAW ENFORCEMENT (1½)
Prerequisite: Police Science 50.
To provide advanced training in the skills and knowledge that police forces need in emergencies. Covers fall-out shelter management; criminal law; report writing; subversive activities; case preparation and court work; juvenile delinquency; firearms training and detention procedure. Class: 3 hours per week for ½ semester.

54 DISASTER CONTROL (1½)
Prerequisites: Police Science 50 and 52.
Coordination and cooperation among the various law enforcement organizations; operational plans in relation to the overall civil defense plan; clarification of instructions and civil law in disasters; role of the FBI in internal security; emergency traffic control; and selection, training, and use of auxiliary police. Class: 3 hours per week for ½ semester.

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, constitutionalism, and propaganda. This fulfills the state requirement in U.S. Constitution and state and local government. 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.

X 3 AMERICAN POLITICAL PROBLEMS (3)
Prerequisite: Eligibility for English 1a.
A survey of the major current political problems of America. The principal topics will include political strategy and method, state and local governments, civil rights, government and the economy, and foreign relations. This course fulfills the state requirement in U.S. Constitution and state and local government. Class: 3 hours.

7 SURVEY OF INTERNATIONAL RELATIONS (3)
Prerequisites: 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.
POLITICAL SCIENCE  PSYCHOLOGY

51  STUDENT GOVERNMENT THEORY (1)
Prerequisite: Membership on the Student Council or approval of the 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

1a  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: Minimum 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: Minimum grade of C in Psychology 1a or University eligible.
A 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 (3)
Prerequisite: 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 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 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.

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 1/2 semester.

SOCIAL SCIENCE

31a, 31b, 31c SPECIAL PROJECT IN SOCIAL SCIENCE (1)
32a, 32b, 32c SPECIAL PROJECT IN SOCIAL SCIENCE (2)
33a, 33b, 33c SPECIAL PROJECT IN SOCIAL SCIENCE (3)
Prerequisite: Approval of the 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.
SOCIOLOGY

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 help 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 and approval of the instructor.
An intensive, methodical presentation to develop facility in the skills of listening 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: 1 hour.

3, 4 INTERMEDIATE SPANISH (4-4)
Prerequisite for Spanish 3: Spanish 2, or three years of high-school Spanish and approval of the instructor. Prerequisite for Spanish 4: Spanish 3 or four years of high-school Spanish and approval of the instructor.
Grammatical structures of more complex nature. Reading selections of increasing challenge. Continued activity in conversational practice, meaningful writing and development of cultural insight.
Spanish 4 rounds up the two-year course as a complete unit and establishes a firm foundation for further study. Class: 5 hours; laboratory: 1 hour.

11 SPANISH FOR NATIVE SPEAKERS (4)
Intensive training in oral and written Spanish for students who speak Spanish at home but have had no formal training in the language. Class: 5 hours.

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.
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 (3)  
Practice in oral interpretation of poetry, prose, and dramatic literature. Recommended for English, speech and drama majors. Class. 3 hours.

6a, 6b, 6c, 6d FORENSICS (1-1-1-1)  
Recommended preparation: High-school debate and/or forensics experience.  
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 approval of the 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.

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.

80a, 80b, 80c, 80d LEADERSHIP DEVELOPMENT (1-1-1-1)  
Understanding human behavior in groups; seeking ways to improve success in group activities and helping to mature and improve group effectiveness. Methods for helping the group to practice effective democratic action. Class: 2 hours per week for 9 weeks.
STATISTICS

1 ELEMENTARY STATISTICS (3)
Prerequisites: One year of high-school algebra with a grade of B or better, or Mathematics 91 with a grade of C or better.
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. This course satisfies the requirement for several majors including business and social studies. 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 (3)
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 LABOR MANAGEMENT RELATIONS (2)
Prerequisites: 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, as 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 (3)
Prerequisite: Supervision 51.
A basic teacher-training course designed to train supervisors to give on-the-job instruction to employees assigned to them. Class: 3 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)
Prerequisites: 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.
80 ELEMENTS OF QUALITY CONTROL (3)
A survey course covering the total quality control function in industry. The latest concepts and techniques are studied in the light of modern manufacturing requirements and current technological developments. Class: 3 hours.

83 STATISTICAL QUALITY CONTROL (3)
Prerequisite: Supervision 80 or equivalent.
The application of statistics to the field of quality control. Use of statistics in control charts for variables, fraction defective and defects per unit; normal distribution curves; probability theory; tolerances; acceptance sampling; sampling methods; military specifications. Class: 3 hours.

85 PRINCIPLES OF RELIABILITY (3)
Prerequisite: Supervision 80 or equivalent.
A survey of the fundamental concepts of modern reliability theory and application of these concepts. Topics include basic reliability, important statistical distributions, relationship of reliability, maintainability and availability; principles of reliability design; analysis of reliability data and reliability specifications. Class: 3 hours.

87 QUALITY PLANNING (3)
Prerequisite: Supervision 80 or equivalent.
This course covers such quality areas as documentation review, supplies quality requirements, evaluation and control of manufacturing processes, inspection gauges, test equipment, classification of defects, characteristics, and preparation of procurement, manufacturing and shipping inspection planning. Class: 3 hours.

89 QUALITY CONTROL INSPECTION AND TESTING (3)
A comprehensive study of inspection and testing concepts and methods. Topics include inspection and test requirements, records, mechanical measuring equipment, test equipment, use of sampling plans, and all phases of inspection. Class: 3 hours.

104a, 104b, 104c, 104d SUPERVISED WORK EXPERIENCE (3-3-3-3)
On-the-job experience is related to theory through guided discussions. Class: 1 hour on campus plus a minimum of 16 hours of employment.

WELDING

51a FUNDAMENTALS OF WELDING (2)
A combination laboratory and lecture course in methods of oxyacetylene, 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.

ZOOGOLOGY

1a, 1b GENERAL ZOOLOGY (5-5)
Prerequisite for Zoology 1b: One semester of biological science or approval of the 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. This course meets the requirements of those majoring in the biological sciences, medicine, dentistry, agriculture, or physical education. Class: 3 hours; laboratory: 6 hours.
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