

College of San Mateo

1971-1972

Catalog

COLLEGE OF SAN MATEO CATALOG 1-12

A community junior college
accredited by the Western Association
of Schools and Colleges

1700 West Hillsdale Blvd., San Mateo, Calif. 94402 • Day Phone: 574-6161 Evening Phone: 574-6544

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Calendar for 1971-72

June 12
English and aptitude examinations (8 a.m.)

June 21
Summer session, 1971, classes begin

July 5
Independence Day holiday

July 15
Last day to petition for summer A.A. degree

July 17
English and aptitude examination (8 a.m.)

July 30
Summer session six-week classes close

August 7
Application deadline for fall admission
English placement and aptitude examinations (8 a.m.)
Foreign language placement examinations (2 p.m.)

August 23-September 3
Registration by appointment with counselor for fall semester, 1971

August 13
Summer session eight-week classes close

September 7, 8
Registration for special students (9 a.m.)

Fall Semester 1971

September 6
Labor Day holiday

September 9
Admission Day holiday

September 13
Day and evening classes begin

September 24
Last day to add new classes

October 18
Applications available for spring semester, 1972

October 25
Veterans' Day holiday

November 5
End of midterm grading period

November 15
Last day to apply for fall A.A. degree or certificate

November 19
Last day to drop a class without penalty

November 25, 26
Thanksgiving recess

December 11
English and aptitude examinations (8 a.m.)

December 20-31
Winter recess

January 8
English and aptitude examinations (8 a.m.)

January 21
Evening classes close

January 17-25
Final examinations/counseling and registration, new and returning students

January 25
Day classes close

Spring Semester 1972

January 31-February 1
General registration, and registration of special students

January 26-February 4
Between-semesters recess

February 7
Day and evening classes begin

February 11
Lincoln's Birthday holiday

February 21
President's Day holiday

February 22
Last day to add new classes

March 15
Applications available for fall semester, 1972

March 27-31
Spring recess

April 7
End of midterm grading period

April 14
Last day to apply for June A.A. degree or certificate

April 15
English and aptitude examinations (8 a.m.)

April 21
Last day to drop a class without penalty

April 22
English and aptitude examinations (8 a.m.)

April 29
English and aptitude examinations (8 a.m.)
Foreign language placement examinations (2 p.m.)

May 6
English and aptitude examinations (8 a.m.)

May 13
English and aptitude examinations (8 a.m.)
Foreign language placement examinations (2 p.m.)

May 29
Memorial Day holiday

June 7-15
Final examinations

June 9
Evening classes close

June 10
English and aptitude examinations (8 a.m.)

June 15
Day classes close

Board of Trustees

Eleanore D. Nettle
(Since 1956)
Housewife

Francis W. Pearson Jr.
(Since 1963)
Certified Public Accountant

Robert A. Tarver
(Since 1953)
Attorney

James R. Tormey Jr.
(Since 1971)
Attorney

Carl E. Ward
(Since 1960)
Bank Executive

Administrative Staff

District Chancellor-Superintendent
Clifford G. Erickson

COLLEGE OF SAN MATEO STAFF

President
David H. Mertes

Dean of Instruction
To be named

Dean of Students
Allan R. Brown

Dean for Community Services
To be named

*Associate Dean of Instruction-
Academic*
Calvin B. Apter

*Associate Dean of Instruction-
Careers*
To be named

Associate Dean of Student Services
Philip D. Morse

Associate Dean of Student Affairs
Herbert R. Warne

Administrative Assistant
To be named

*Associate Dean of Community
Services and Director, College of
the Air*
Jacob H. Wiens

*Assistant Dean of Instruction for
Library Services*
John B. Dooley

Dean of Women
Ruth H. Weston

*Assistant Dean of Instruction for
Evening Program*
Gilberto S. Villarreal

*Director of College Readiness
Program*
David A. Thomas

Athletic Director
Herbert H. Hudson

Coordinator, Community Programs
Helen M. Foley

Psychological Services
Charles M. Devonshire

Testing and Guidance
Edmond O. Shinn

Health Services
Yolande S. Hilpisch

Supervisor, Buildings and Grounds
Chester R. Williams

Manager, Student Center
John T. Darro

Manager, Bookstore
William H. Arthur

CHAIRMEN, DAY DIVISIONS

Aeronautics
John P. Nystrom

Business Education
Thomas W. George

Cosmetology
Lorraine Bush

English
John M. Gill

Ethnic Studies
To be named

Fine Arts
Harry W. Prochaska

Foreign Languages
Henry M. Cordes

Health Occupations
Anne M. Grubbs

Life Science
Samuel A. Ferguson

Math-Engineering
Gilbert B. Gossett

Physical Education
Clifford G. Giffin

Physical Science
Kate H. Murashige

Social Science
Walter M. Kaufmann

Technician
Albert K. Fine

College Faculty

(Date of original appointment follows name.)

- Acena, Albert A.** (1966)
History
B.A., Seattle University
M.A., University of Washington
- Alexander, Marvin** (1966)
Education
B.A., Pennsylvania State University
M.A., Stanford University
- Alexander, W. Jeanne** (1965)
English
B.A., M.A., Washington University, St. Louis
- Alexandre, Alvin A.** (1961)
English Journalism
B.A., M.A., New York University
- Allende, David H.** (1967)
Art
B.A., M.A., University of Tulsa
- Anderson, Claude M.** (1947)
Astronomy
A.B., A.M., Ph.D., University of Calif., Berkeley
- Anderson, Robert D.** (1959)
Physics
A.B., University of Calif., Berkeley
M.S., Purdue University
- Andrews, Edgar H.** (1958)
History
A.B., M.A., University of Calif., Berkeley
- Anenson, Marian R.** (1964)
Nursing
B.S., R.N., University of Minnesota
- Angerbauer, George** (1963)
Electronics Technology
- Appleton, Alanson** (1961)
Art
A.B., California College of Arts and Crafts
M.A., University of Calif., Berkeley
- Apter, Calvin B.** (1955)
Associate Dean of Instruction
A.B., M.A., University of Calif., Berkeley
- Baker, Mary J.** (1967)
Biology
A.B., University of Calif., Berkeley
M.A., San Francisco State College
- Balsley, Raymond I.** (1946)
Physical Education
A.B., University of Calif., Berkeley
A.M., Stanford University
- Banks, Angela S.** (1964)
Physical Education
B.A., Miami University
M.A., San Francisco State College
- Bardes, Leo N.** (1965)
Music
B.A., M.A., San Francisco State College
- Bartges, Rex J.** (1965)
Biology
A.B., San Jose State College
M.S., Ph.D., University of Calif., Berkeley
- Beale, Paul L.** (1963)
Business
B.S., M.B.A., Stanford University
- Beaty, Donald E.** (1967)
B.A., M.A., Whittier College
M.A., Colorado College
- Bell, James K.** (1963)
English
B.A., University of Calif., Santa Barbara
M.A., University of Calif., Berkeley
- Benjamin, Agnes E.** (1969)
Cosmetology
- Berensmeier, Barbara Jean** (1956)
Physical Education
A.B., San Francisco State College
- Berglund, John J.** (1965)
Aeronautics
- Berry, Daniel A.** (1958)
Business Administration
B.S., Armstrong College
A.B., M.A., University of Calif., Berkeley
- Berry, Frederick J.** (1968)
Music, Ethnic Studies
B.M., M.M., Southern Illinois University
- Berryhill, Helen C.** (1954)
English, Counselor
B.A., University of Calif., Berkeley
M.A., San Francisco State College
- Beuttler, Rose Marie P.** (1965)
French
B.A., University of Calif., Berkeley
A.M., Stanford University
- Bierce, Ralph H.** (1964)
English
A.B., M.A., University of Calif., Berkeley
- Billeter, William J.** (1961)
Business Administration, Data Processing
B.S., Golden Gate College
M.A., San Francisco State College
- Birmingham, Mary A.** (1963)
Nursing
R.N., College of Saint Scholastica
B.S., University of Minnesota
M.N., University of Washington

Blanchette, Jeanne (1966)
Nursing
B.S., M.Ed., University of Minnesota

Blostein, Paul J. (1969)
Librarian
B.A., University of Calif., Berkeley
M.A., University of Denver

Blust, Dale W. (1965)
Aeronautics, Counselor

Blust, Kenneth E. (1966)
Aeronautics

Boone, John R. (1968)
Telecommunications
B.S., University of Oregon

Bouras, Aristotle (1962)
Librarian
B.A., Fresno State College
M.A., University of Denver

Brames, Thomas J. (1964)
Electronics Technology
B.V.E., San Francisco State College
M.S., Utah State University

Bramlett, George E. (1969)
Electronics Technology
B.A., Fresno State College
M.A., San Jose State College

Brauns, Robert A. (1954)
Play Production
A.B., Stanford University

Brown, Allan (1959)
Dean of Students
A.B., A.M., Stanford University

Brown, Francesca (1965)
English
A.B., M.A., University of Calif.,
Berkeley

Brusin, Michael J. (1964)
History, Economics
B.A., M.A., San Jose State College

Bucher, Michael C. (1969)
Biology
B.A., M.A., University of California,
Los Angeles

Burdash, Elizabeth A. (1965)
Psychology
B.A., Boston University
M.S., Mass. Institute of Technology

Burris, Jack R. (1968)
English
B.A., M.A., San Francisco State
College

Burton, Kathleen M. (1968)
Business
B.S., University of Wyoming

Burton, Virginia (1950)
Physical Education
A.B., MacMurray College
A.M., Teachers College, Columbia
University

Bush, Lorraine (1953)
Chairman, Cosmetology Division,
Counselor

Cafferata, John (1968)
English
B.A., M.A., San Francisco State
College

Callahan, Lois A. (1968)
Business
B.S., Southwest Missouri State
College
M.A., Chico State College

Cameron, Daniel B. (1968)
English
B.A., Hunter College
M.A., Columbia University

Camps, Albert (1967)
Electronics Technology

Carpenter, Joanne R. (1965)
Economics
A.B., San Francisco State College
M.S., University of Wisconsin

Carter, Stuart R. (1964)
Physical Education
A.B., M.A., San Jose State College

Casstevens, Jewell (1963)
Cosmetology

Castillo, Richard P. (1969)
Spanish
B.A., University of Calif., Berkeley

Cate, Donald F. (1964)
Political Science
B.A., Pacific University
M.A., Oregon State University
Ph.D., Stanford University

Chowenhill, Dean F. (1967)
Drafting Technology
B.A., M.A., San Jose State College

Chriss, Michael (1966)
Astronomy
B.S., M.S., University of Arizona

Chroman, Peter (1969)
Sociology
B.S., University of Illinois
M.A., San Francisco State College

Clark, Fred J. (1963)
Physics
A.B., University of Calif., Los Angeles
A.M., Stanford University

Clark, Joseph E. (1965)
History, Political Science
A.B., Ph.D., Stanford University
M.A., State University of Iowa

Clemens, Michael J. (1967)
Political Science
A.B., M.A., Columbia University

Clemens, Roger W. C. (1957)
Forestry, Counselor
B.S., M.S., University of Calif.,
Berkeley

Clinkscapes, J. Kyle (1957)
Chemistry
B.S., University of Calif., Berkeley
M.S., University of Pacific

Clinton, Harry F. (1961)
Business
B.S., Oregon State University
M.S., University of Southern
California

Cohn, Adrian A. (1963)
English
B.S., M.S., Ph.D., University of
Wisconsin

Cooke, Stuart T. (1964)
History
A.B., Lafayette College
M.A., University of Pennsylvania

Cooper, Barton C. (1965)
Philosophy
B.A., Ph.D., University of Calif.,
Berkeley

Cordes, Henry M. (1964)
Chairman, Foreign Language
Division
B.A., M.A., State University of New
York, Buffalo
Ph.D., Stanford University

Cortopassi, Lynne M. (1969)
Librarian
B.S., Michigan State University
M.A.L.S., University of Michigan

Coulson, Robert N. (1965)
Machine Tools Technology
A.B., San Francisco State College
M.A., San Francisco State College

Coyne, Robert J. (1963)
Art, Photography
B.A., M.A., San Francisco State
College

Crawford, Douglas B. (1960)
Mathematics, Counselor
A.B., A.M., Stanford University

Crawford, Zelte (1969)
Ethnic Studies Division
B.S., M.A., Western Michigan

Crest, Richard L. (1958)
Music
B.A., San Jose State College

Cron, John A. (1968)
Business
A.B., M.A., San Francisco State
College

Crouch, Dorothy J. (1968)
Biology
A.B., University of Calif., Berkeley
M.A., Ph.D., Stanford University

Cummings, Marlene M. (1965)
Nursing
B.S., R.N., College of St. Scholastica
M.S., University of California, San
Francisco

Cunningham, Theodore (1970)
Veterans Affairs
B.S., Creighton University
B.A., M.A., St. Louis University

Curren, Terence B. (1962)
Biology, Physical Anthropology
B.A., University of Calif., Berkeley
M.A., San Francisco State College

Daniels, Jack (1946)
Art, Counselor
A.B., San Jose State College
A.M., Stanford University

Davidson, Marcia A. (1960)
Business, Counselor
B.A., M.A., Michigan State University

Davis, Gregory (1966)
Political Science
A.B., A.M., Stanford University

De Freitas, Louis (1966)
Welding Technology

De Gregorio, Michael J. (1957)
Chemistry
A.B., A.M., San Francisco State
College

De Hart, William R. (1964)
Technical Illustration
B.A., University of New Mexico
M.A., University of Iowa

Dehnel, George S. (1962)
Biology, Botany, Life Science
B.A., San Diego State College
Ph.D., University of Calif., Berkeley

Devonshire, Charles M. (1958)
Psychology, Psychological Services
B.A., M.A., University of Texas

Donner, Richard C. (1963)
Physical Education
B.A., M.A., San Jose State College

Dooley, John B. (1963)
Assistant Dean of Instruction for
Library Services
B.A., M.A., B.L.S., University of Calif.,
Berkeley

Edmundson, James S. (1964)
French
B.A., University of Washington
B.S., Georgetown University
M.A., University of Washington
Ph.D., Columbia University

Failli, Joseph N. (1964)
Librarian
Graduate, University of Florence
M.L.S., University of Calif., Berkeley

Fark, Roland H. (1969)
Biology
B.S., M.A., Bowling Green State
University

Faure, Emile L. (1970)
Mathematics
B.A., San Deigo State College
M.A., Claremont Men's College

Fellows, Ward J. (1966)
Philosophy
A.B., Cornell University
B.D., S.T.M., Union Theological
Seminary
M.A., University of Calif., Berkeley

Ferguson, Samuel A. (1968)
Chairman, Life Science Division
Anatomy, Physiology
B.A., Oakwood College
Ph.D., University of Pennsylvania

Fine, Albert K. (1956)
Chairman, Technician Division
A.B., University of Calif., Santa
Barbara
A.M., Stanford University
Ed.D., Stanford University

Fishback, Dell M. (1939)
Health Education, Counselor
A.B., University of Calif., Berkeley

Fisher, Anita (1969)
Psychology
B.A., University of Southern Calif.
Ph.D., Stanford University

Fitzgerald, Maurice J. (1964)
English
B.S., A.M., Stanford University

- Foley, Helen M.** (1963)
Coordinator, Community Programs
A.B., Reed College
- Fountain, Aline** (1965)
Guidance, Counseling
B.S., Florida State University
M.A., San Francisco State College
(Education)
M.A., San Francisco State College
(Counseling and Psychology)
- Fouts, Carol A.** (1964)
Physical Education
A.B., University of Calif., Santa
Barbara
M.A., San Francisco State College
- Foye, James F.** (1971)
Aeronautics
- Fraker, Wilson P.** (1968)
Business
A.B., Harvard University
M.B.A., University of Calif., Berkeley
- Frassetti, Gerald J.** (1967)
English, Counselor
B.A., St. Mary's College
M.A., San Francisco State College
- Free, Herbert W.** (1967)
Business, Real Estate
A.B., M.A., University of Calif.,
Berkeley
- Galindo, Donald V.** (1956)
Art
A.B., University of Calif., Berkeley
B.A.E., M.F.A., California College of
Arts and Crafts
- Gattmann, Eric** (1964)
Education
A.B., University of Calif., Berkeley
M.A., San Francisco State College
- George, Thomas W.** (1966)
Chairman, Business Division
B.A., M.A., Texas Technological
College
Ph.D., University of Washington
- Gibb, Robert F.** (1969)
Electronics Technology
B.A., Whittier College
- Giffin, Clifford G.** (1958)
Chairman, Physical Education
Division
B.S., M.S., University of Oregon
- Gill, John M.** (1969)
Chairman, English Division
B.A., M.A., University of Washington
Ph.D., New York University
- Glazier, Teresa F.** (1961)
English
B.Ed., Western Illinois University
M.A., University of Chicago
- Glen, William** (1957)
Geology, Paleontology, Counselor
B.S., Brooklyn College
M.A., University of California
- Goehler, John H.** (1970)
Political Science
B.A., M.A., San Francisco State
College
- Goss, William A.** (1949)
History
A.B., University of Calif., Los Angeles
M.A., University of Calif., Berkeley
- Gossett, Gilbert B.** (1955)
Chairman, Mathematics-Engineering
Division
B.A., M.A., University of Pacific
- Graham, Alexander** (1966)
Horticulture
Scottish Diploma Horticulture, West
Scotland, College of Agriculture
Diploma Horticulture, Royal Botanic
Garden, Edinburgh, Scotland
National Diploma Horticulture, Royal
Horticulture Society
- Griffin, Irene F.** (1964)
Drama, Counselor
A.B., Barnard College
A.M., Stanford University
- Grossenbacher, Karl** (1969)
Biology
Ph.B., University of Wisconsin
Ph.D., University of Calif., Berkeley
- Grubbs, Anne M.** (1960)
Chairman, Health Occupations
Division, Counselor
A.B., Fresno State College
R.N., Fresno County General
Hospital
M.N., University of Washington
- Gum, H. Sanford** (1963)
Technical Drafting
A.B., San Jose State College
A.M., Stanford University
- Gustavson, Charles F.** (1966)
Music
A.B., M.A., San Francisco State
College
- Haight, Charles Henry** (1958)
History
B.A., A.M., University of Calif.,
Berkeley
Ph.D., Stanford University
- Halualani, Jennie** (1963)
Nursing
B.S., St. Mary's College
R.N., St. Francis Hospital School of
Nursing
- Hancock, John C.** (1965)
Music
A.B., San Francisco State College
M.A., San Jose State College
- Hannigan, Jane E.** (1958)
English
A.B., University of Calif., Berkeley
M.A., San Francisco State College
- Hansen, Merrill C.** (1957)
Speech
B.A., University of Utah
A.M., Ph.D., Stanford University
- Hardt, James R.** (1964)
Assistant Dean, Community
Services, English
A.B., University of Massachusetts
A.M., Harvard University

Harriman, William (1963)
English
A.B., M.A., J.D., University of Calif.,
Berkeley

Harrington, Joyce M. (1969)
Nursing
B.S.N., Seattle University
P.H.N., Univ. of Calif., San Francisco

Harris, Edward M. (1968)
Mathematics
B.S., University of Colorado
M.A., San Francisco State College

Harris, Richard V. (1965)
Physical Education
A.B., M.A., Humboldt State College

Harrison, Kenneth W. (1969)
Music
B.A., University of Southern Calif.
M.A., San Francisco State College

Hazelton, Louise B. (1960)
English, History, Counselor
B.A., University of Calif., Los Angeles
M.A., Fresno State College

Hecomovich, John (1947)
Electronics Technology, Counselor
Dunwoody Technical Institute

Henderson, Frances C. (1967)
A.A. Nursing
B.S., Dillard University
M.S., University of Calif., San
Francisco

Heyeck, Robin R. (1965)
English
A.B., A.M., Stanford University

Hills, Dorothy (1968)
Child Development
B.S., University of Oregon

Hilpisch, Yolande S. (1968)
College Nurse
A.B., Stanford University
R.N., Stanford University School of
Nursing
P.H.N., M.S., University of Calif., San
Francisco

Hocker, Woodson F. (1964)
Spanish
B.S., United States Military Academy
M.A., Universidad Nacional
Autonoma de Mexico

Holmes, Paul C. (1964)
English
B.A., University of Calif., Berkeley
M.A., San Francisco State College

Holmgren, Roy H. (1957)
Mathematics
A.B., M.A., University of Calif.,
Berkeley

Hopkins, Cecilia Ann (1958)
Real Estate, Counselor
B.S., Montana State College
M.A., San Francisco State College
(Business Education)
M.A., San Francisco State College
(Counseling and Administration)

Horn, Clifford V. (1947)
Business
A.B., San Jose State College
A.M., Stanford University

Howe, Robert S. (1965)
Guidance, Counselor
A.B., San Jose State College
A.M., Stanford University

Hubbard, Kenneth R. (1968)
Aeronautics

Hudson, Herbert H. (1947)
Physical Education, Counselor,
Director of Athletics
A.B., San Jose State College
A.M., Stanford University

Husted, Margreta S. (1955)
Chemistry
B.S., Nebraska State Teachers
College
M.A., San Jose State College

Hynding, Alan A. (1967)
History
B.S., University of Oregon
M.A., Stanford University
Ph.D., University of Washington

Ice, James A. (1946)
Chemistry
A.B., Arizona State University
M.A., University of Calif., Berkeley

Ingalls, Richard E. (1970)
Audio-Visual Services
B.A., M.A., San Francisco State
College

Ingraham, Joeann (1962)
Physical Education
A.B., San Jose State College

Innis, James E. (1967)
Health Education, Life Science
A.B., M.A., University of Northern
Colorado

Ireson, Mamie G. (1963)
Home Economics
B.S., University of Virginia
M.S., Virginia Polytechnic Institute

Jackson, James L. (1959)
Mathematics
B.A., Beloit College
M.A., University of Calif., Berkeley

Jacques, James J. (1969)
Physical Education
B.A., M.A., San Jose State College

Jaffy, Florence I. (1958)
Economics
A.B., Pennsylvania State College
M.A., University of Chicago

Janssen, William A. (1965)
Business
A.B., M.A., San Jose State College

Jeffers, Mary L. (1963)
Political Science
A.B., M.A., Tennessee State Univ.

Johnson, Arthur L. (1971)
Political Science
B.A., M.A., University of Calif.,
Berkeley

Jorgenson, Wallace (1969)
Aeronautics

Joslin, Rex J. (1964)
Biology
B.S., Wisconsin State College
M.S., University of Illinois

Justice, William J. (1946)
Business Administration, Counselor
B.S., M.C.S., Boston University
Ed.D., Stanford University

Karl, John E. Jr. (1962)
Anatomy, Physiology
B.A., Allegheny College
M.S., University of Kentucky
Ph.D., Louisiana State University

Kaufman, Ronald H. (1950)
Spanish
A.B., Hiram College
A.M., Stanford University

Kaufmann, Walter M. (1966)
Chairman, Social Science Division
B.A., J.D., University of Calif.,
Berkeley

Kellejian, Robert (1962)
Electronics Technology
A.B., M.A., San Francisco State
College

Keller, Robert M. (1958)
Chemistry
A.B., M.A., San Jose State College

Kennelly, Maureen E. (1970)
Nursing
M.P.H., University of Michigan
B.S.N., DePaul University

Kennelly, Thomas W. (1966)
Psychology
B.A., M.A., University of Buffalo
Ph.D., Columbia University

Keys, Noel W. (1966)
Psychology
B.S., Denison University
M.A., Duke University
Ph.D., University of North Carolina

Kimball, Michael B. (1968)
English
B.A., Stanford University
M.A., San Francisco State College

Knight, Gordon W. (1970)
Sociology
B.A., Rockford College
M.A., Stanford University

Kolber, Marvin A. (1946)
Zoology, Biology
B.S., M.S., University of Calif.,
Berkeley

Kusich, Edward A. (1946)
Engineering, Mathematics
B.S., M.S., University of Calif.,
Berkeley

Langston, Claire (1962)
Dental Assisting, Counselor

Lapp, Rudolph M. (1955)
History
A.B., Roosevelt University
M.A., Ph.D., University of Calif.,
Berkeley

Leach, Walter J. Jr. (1956)
Psychology, Sociology
B.A., University of Calif., Los Angeles
M.A., University of Calif., Santa
Barbara

Lee, Priscilla T. (1967)
Anthropology
A.B., A.M., Ph.D., Stanford University

Le Gallais, D. Richmond (1955)
Chemistry
B.S.A., M.S.A., University of British
Columbia
Ph.D., University of Calif., Berkeley

Lehman, Anita J. (1963)
English, Counselor
B.A., M.A., University of Calif., Los
Angeles

Leroi, Frank B. (1968)
Economics
B.A., University of Calif., Los Angeles
M.A., San Jose State College

Linder, Doris H. (1967)
History
B.A., M.A., Stanford University
Ph.D., University of Minnesota

Lokken, Arlys K. (1963)
Nursing
R.N., University of North Dakota
School of Nursing
B.S., University of North Dakota

Lorenzato, Raymond (1965)
Art
B.A., Humboldt State College
M.F.A., Calif. College of Arts and
Crafts

MacDonald, Lorne (1968)
Electronics Technology
B.S., Pacific States University

Mackay, Bernice O. (1970)
Special Education
B.S., University of Calif., Berkeley
M.A., San Francisco State College

Mainwaring, Shirley M. (1968)
Health Education
B.A., University of North Carolina at
Greensboro
M.A., Stanford University

Mantabe, Musonda D. (1969)
Counselor, College Readiness
Program
B.A., Syracuse University

Marshall, R. Galen (1964)
Music
A.B., M.A., San Francisco State
College

Martin, Chauncey J. (1967)
Machine Tools Technology

Maxwell, Allan H. (1969)
Electronics Technology
A.B., San Jose State College
M.A., San Francisco State College

McClure, Clois A. (1963)
Technical Drafting, Counselor
A.B., Fresno State College
M.A., San Francisco State College

McCue, Mary J. (1955)
English
B.A., Marygrove College
M.A., University of Michigan

McDonough, Joseph M. (1966)
Psychology
A.B., Princeton University
M.S., University of Miami
Ph.D., Michigan State University

McMillin, Virginia A. (1963)
Nursing
B.S., University of Dayton, Ohio
R.N., St. Elizabeth's Hospital, Ohio

Meek, Austen B., Jr. (1968)
Mathematics
B.A., San Jose State College
M.A., Bowdoin College

**Mendenhall, Valdemer A.,
Jr.** (1967)
Aeronautics

Mertes, David H. (1965)
President
B.A., San Francisco State College
M.A., Ph.D., University of Calif.,
Berkeley

Michael, Robert E. (1965)
Business Administration
B.S., M.S., San Jose State College
B.F.T., American Institute Foreign
Trade

Miller, William H. (1961)
History
A.B., College of Wooster
M.A., Ph.D., University of Calif.,
Berkeley

Monroe, Howard C. (1961)
Biology, Counselor
B.S., University of Toledo
M.A., University of Calif., Los
Angeles

Montgomery, Douglas B. (1963)
Telecommunications
B.S., M.A., San Diego State College

Montgomery, John A. (1964)
Business Administration, Counselor
B.S., J.D., University of Pennsylvania

Morse, Philip D. (1940)
Dean of Student Services,
Counselor
A.B., Occidental College
M.A., University of Calif., Berkeley

Mulhall, Mary Ellen (1963)
Business, Counselor
B.A., San Francisco State College
M.A., University of San Francisco

Mullaney, Ellentine M. (1964)
English
B.A., University of Washington
M.A., San Francisco State College

Mullen, Edward C. (1955)
English
A.B., M.A., San Jose State College

Mullen, John F. (1966)
Mathematics, Data Processing
B.S., Stanford University
M.A., University of Calif., Riverside

Multhaup, Ernest L. (1964)
Engineering, Counselor
B.S., M.S., University of North Dakota

Murashige, Kate H. (1968)
Chairman, Physical Science Division
B.A., Washington University
Ph.D., University of Calif., Los
Angeles

Murphy, Alexander J. (1956)
English, Counselor
A.B., A.M., Stanford University

Musgrave, Diane W. (1970)
German
A.B., M.A., Stanford University

Noce, John L. (1961)
Physical Education
A.B., University of Pacific
M.A., San Francisco State College

Nystrom, John P. (1962)
Chairman, Aeronautics Division
Counselor

Odum, Daniel C. (1964)
Telecommunications
A.B., San Diego State College

Olson, Robert A. (1956)
English
B.S., Wisconsin State College
M.A., San Jose State College

O'Mahony, Rosalie M. (1965)
Mathematics
B.S., Loyola University
M.S., University of Notre Dame

Orozco, Adrian (1969)
Counselor, College Readiness
Program
S.T.B., St. Alexis College, Rome, Italy

Owen, William H. (1963)
Machine Tools Technology
A.B., M.A., San Francisco State
College

Petelin, Zoia V. (1963)
Cosmetology

Petit, Susan Y. (1968)
English
B.A., Knox College
M.A., Purdue University

Pex, Betty C. (1960)
English
Ph.B., A.M., University of Chicago

Pflug, Raymond J. (1956)
English
A.B., A.M., Stanford University

Phipps, Richard S. (1962)
Political Science, Counselor
A.B., M.A., University of Calif.,
Berkeley

Pinney, Wilson G. (1961)
English
A.B., Trinity College
Ed.M., Harvard University

Polansky, Stephen H. (1968)
Political Science
B.A., Princeton University
J.D., Harvard Law School

Porter, Donald T. (1963)
Philosophy
B.S., M.A., University of Calif.,
Berkeley

Pounds, Robert D. (1970)
Physical Education
B.S., University of Calif., Los Angeles

Price, Dolores (1967)
Physical Education
B.S., M.Ed., Oregon State University

Prindle, Philip G. (1958)
Speech, English
B.A., Concordia College, Minnesota
M.A., Washington State University

Prochaska, Harry W. (1950)
Chairman, Fine Arts Division,
Counselor
A.B., Occidental College
M.A., San Francisco State College

Pumphrey, A. Jean (1967)
English
B.A., Denison University
M.A., San Francisco State College

Rascon, Vincent P. (1963)
Art
B.A., Texas College
M.F.A., Los Angeles County Art
Institute

Rategan, Edward H. (1968)
Data Processing
B.A., J.D., Marquette University

Rempel, Elizabeth K. (1956)
Architecture, Art
B.A., Mills College
M.A., San Francisco State College

Reynolds, Elizabeth A. (1970)
Counselor
B.A., Mills College
M.S.W., University of Calif., Berkeley

Richmond, Kern (1955)
Political Science, Counselor
A.B., M.A., University of Calif.,
Berkeley

Roach, T. James (1970)
Sociology, Psychology
B.A., M.A., San Francisco State
College

Rock, Jo Ann C. (1964)
Physical Education
B.S., Pacific University
M.A., San Francisco State College

Rodak, Irene (1970)
Nursing
B.S., M.A., University of New York

Rolph, Samuel S. Jr. (1947)
Play Production
A.B., University of Calif., Los Angeles

Ross, Hugh (1961)
History
B.A., M.A., University of Virginia
Ph.D., Stanford University

Rubler, Selma (1964)
Nursing
R.N., Beth Israel Hospital
B.S., M.S., University of Calif., San
Francisco

Rue, Betty B. (1961)
Dental Assisting, Counselor

Ruffin, Jeannette J. (1955)
Speech, English
A.B., San Francisco State College
A.M., Stanford University

Rundberg, William B. (1967)
Mathematics
B.A., San Jose State College
M.A., Bowdoin College

Rush, Robert D. (1969)
Physical Education
B.A., M.A., San Jose State College

Sausjord, Rosa I. (1963)
Spanish
M.A., Smith College
Ph.D., State University of Iowa

Savidge, David (1955)
English
A.B., DePauw University
M.A., University of Calif., Berkeley

Saxton, Lloyd O. (1955)
Psychology
A.B., University of Calif., Berkeley,
M.A., San Francisco State College
Ph.D., University of Pacific

Schiebold, Marie R. (1965)
English
B.A., M.A., San Francisco State
College

Schneider, John T. (1960)
Economics
B.A., University of Southern
California
M.B.A., University of Calif., Los
Angeles

Schoenstein, Edward G. (1967)
Technical Illustration
A.B., M.A., Chico State College

Schumacher, William J. (1967)
Police Science
A.B., San Francisco State College
J.D., University of San Francisco

Schwartz, Edwin A. (1957)
Psychology, Counselor
B.A., New York University
M.A., New Mexico Highlands Univ.

Scott, Stanley R. (1964)
Technical Drafting
B.S., Iowa State College
M.A., San Jose State College

Shafer, Stephen E. (1968)
Physical Education
B.S., M.A., Utah State University

Shapiro, Robert L. (1963)
Electronics Technology
A.B., University of Michigan
M.A., University of Calif., Los
Angeles

Shih, Susan W. (1969)
Counselor, College Readiness
Program
A.B., Barnard
M.A., Stanford University

Shinn, Edmond O. (1956)
Guidance, Testing, Counselor
A.B., M.A., University of Calif.,
Berkeley

Short, George W. (1964)
English, Speech, Counselor
B.A., Occidental College
M.A., San Francisco State College

Silva, Caroline R. (1962)
Physical Education
A.B., M.A., San Francisco State
College

Sinclair, Helen P. (1963)
Physical Education
B.A., University of Washington

Singh, Balbir (1964)
Mathematics
B.S., St. John's College, Agra
University, India
A.M., Stanford University
Ph.D., University of Southern
California

Smart, Francis A. (1954)
Business Administration
B.S., University of Calif., Berkeley
J.D., Hastings College of the Law

Smith, Robert W. (1965)
Mathematics, Enigneering,
Architecture, Counselor
B.C.E., Clarkson College of
Technology
M.E., University of Calif., Berkeley

Sonner, Grace Y. (1970)
Home Economics
B.A., San Jose State
M.S., Texas Woman's University

Speer, Lee W. (1965)
English
B.S., University of Scranton
M.A., San Francisco State College

Stack, Dennis M. (1968)
Technical Drafting
B.S., Calif. State Polytechnic College
M.A., San Jose State College

Steed, Gilbert G. W. (1954)
Art
Otis Art Institute, L.A.
Hans Hoffman, New York
Art Students League of N.Y.
Courtauld Institute, University of
London
A.M., Stanford University

Stetson, Winifred P. (1962)
Business, Counselor
A.B., M.A., San Francisco State
College

Stewart, Lawrence W. (1968)
English
B.A., University of Utah
M.A., San Francisco State College

Stock, Nancy J. (1968)
Cosmetology

Stoker, Russell M. (1965)
Psychology
B.A., M.A., San Jose State College

Sullivan, Daniel J. (1969)
Business
A.B., Xavier University
M.A., De Paul University
M.B.A., University of Santa Clara

Teel, Ruth R. (1961)
English
B.A., Cornell College
M.A., University of Montana

Thomas, David A. (1970)
Head, College Readiness
B.A., Los Angeles State
M.A., University of Calif., Berkeley

Tippey, James (1969)
Music
B.M., M.M., Indiana University

Tollner, Alfred T. (1968)
Physical Education
B.S., M.S., Calif. State Poly. College,
San Luis Obispo

- Tracy, Allen** (1946)
Chemistry, Art
B.A., San Jose State College
- Trouse, Ronald R.** (1963)
English
B.A., University of California
M.A., San Francisco State College
- Tubb, Raymondé M.** (1961)
French
B.S., Utah State University
M.A., University of Calif., Berkeley
- Turner, John F.** (1968)
English
B.A., University of Calif., Berkeley
M.A.T., Stanford University
- Van Vliet, George A.** (1946)
Aeronautics
- Villarreal, Gilberto S.** (1968)
Assistant, Evening Program
B.A., San Jose State College
M.A.T., Stanford University
- Wagner, Carl A.** (1964)
History, Political Science, Counselor
A.B., Roosevelt University
M.A., University of Illinois
- Wakeham, Duane A.** (1965)
Art
B.A., Michigan State University
A.M., Stanford University
- Wallace, George E.** (1954)
Mathematics
B.S., A.M., Stanford University
- Walter, Loyd C.** (1968)
Drafting Technology
B.A., M.A., San Jose State College
- Walters, Bruce E.** (1966)
Aeronautics
B.S., Oklahoma State University
- Warne, Herbert R.** (1955)
Associate Dean of Student Affairs,
Registrar and Admissions Officer
A.B., M.A., University of Pacific
- Weaver, Barlow A.** (1968)
Librarian
B.A., University of Texas
M.L.S., Columbia University
- Weintraub, Alan L.** (1962)
Geography
B.S., De Paul University, Ill.
M.S., University of Chicago
Ph.D., Michigan State University
- Weston, Ruth H.** (1945)
Dean of Women, Counselor
B.S., Skidmore College
A.M., Stanford University
- Wheeler, Marjorie M.** (1968)
Child Development
B.S., University of Minnesota
M.S., Smith College
- Whifler, William A.** (1966)
Architecture
B.A., Stanford University
A.I.A.
- White, Irl E.** (1963)
Drama
B.S., M.S., University of Oregon
- Wiens, Jacob H.** (1939)
Associate Dean of Community
Services, Director of College of
the Air
A.B., A.M., Ph.D., University of Calif.,
Berkeley
- Williams, John C.** (1963)
Biology
A.B., M.A., San Francisco State
College
- Williamson, H. Stuart** (1965)
Biology, Life Science
A.B., Harvard University
M.A., San Francisco State College
- Williamson, Richard A.** (1963)
English
B.A., M.A., San Francisco State
College
- Wilson, Alice P.** (1966)
English
B.A., Washington University
M.A., University of Illinois
- Witt, Irving M.** (1963)
Sociology
B.A., University of Calif., Berkeley
M.A., University of Chicago
Ph.D., University of Calif., Berkeley
- Wittwer, Betty J.** (1965)
Business
B.A., M.A., San Jose State College
- Witzel, Elizabeth L.** (1966)
Dental Assisting
- Woods, Bernard F.** (1948)
Business Administration
A.B., San Jose State College
A.M., Stanford University
- Woolery, Jeanne K.** (1970)
Data Processing
B.S.E., Abilene Christian College
M.B.A., George Washington
University
- Wu, June C.** (1969)
Nursing
A.B., San Francisco State College
M.S., Univ. of Calif., San Francisco
- Young, Frank H.** (1969)
Mathematics
A.B., M.A., San Francisco State
College
- Zempel, William H.** (1964)
Meteorology, Physics, Physical
Science, Counselor
B.A., San Jose State College
M.N.S., Arizona State University
- Zimmerman, Paul C.** (1967)
Architecture
B.A., University of Calif., Berkeley
A.I.A.
- Zones, Christe P.** (1968)
Geology
A.B., University of Pennsylvania
M.S., University of Nevada

Emeriti

Katherine Douglas Schuring
French

E. Gertrude Cook
English

Dr. Elizabeth G. Balderston
English, Dean of Women

T. Beatrice Johnson
English

Dr. Charlie Woodruff Wilson
Zoology

Donna Davis
Art

Samuel A. Francis
Mathematics

George A. Pomeroy
Physics

Dr. Francis M. Stanger
History

Dr. Harry E. Redeker
Chemistry

Leslie Wilson
Geology, Engineering

E. H. Bashor
History

Harry L. Thompson
Sociology, History

Howard E. Durham
Foreign Student Advisor

Ada R. Beveridge
Coordinator of College-Community
Relations

Edla R. Walter
Librarian

Leonora Y. Brem
Health Education

Martha E. Burrill
Coordinator of Admissions and
Registration

Emma O. Newland
Clothing

Gladys L. White
Business

Harry T. Mercer
English

Erford A. McAllister
Journalism

Dorothy F. Herrington
French

Roland K. Abercrombie
Business

Dr. William L. Roach
Psychology

Carol E. Boyd
Home Economics

Dr. David G. Rempel
History, Political Science

John G. Ames
Mathematics

Marjorie L. Hoffman
Mathematics

Francis M. Coe
Agriculture

Maurine Marsh
Spanish

Alice W. Danielson
Home Economics

Ainslie Harris
English

Mildred H. Stickney
Business

Fredric Roehr
Music

Dr. Stanley L. Sharp
German, English, Speech

Ralph W. Likens
Data Processing

Margaret Cornahrens
Business, Counselor

Alan P. Tory
Social Science

Mildred S. Justesen
Political Science

Woodson F. Hocker
Spanish

General Information

The College

College of San Mateo, the "oldest" of the three colleges in the San Mateo Junior College District, is located on a 153-acre site that provides a panoramic view of the entire north Bay Area.

Designed by architect John Carl Warnecke and completed at a cost of almost \$19.5 million, the College opened its doors in 1963 and currently serves almost 18,000 day and night students. It enrolls students from the entire District, although its chief service area is central San Mateo County.

The College's main educational structures are built along a north-south axis provided by the main pedestrian mall. A second mall, running east and west, connects the Fine Arts Center with the Library. Total gross space is 537,000 square feet, with 160 teaching stations, plus offices, storage rooms and supporting facilities.

The architectural style for the College of San Mateo emphasizes both esthetics, in dignity and structural clarity, and practicality—a fitting setting for pursuing a quality education.

The District

Starting with just 35 students when it first opened its doors at the Baldwin Campus in downtown San Mateo in 1922, the San Mateo Junior College District has now grown to a complex of three modern campuses serving over 26,000 day and night students from throughout San Mateo County.

In the beginning, the District consisted only of the area within the San Mateo Union High School District. In 1937 the Jefferson Union and Half Moon Bay high school districts were included, and the San Mateo Junior College District Board of Trustees was established. Sequoia Union High School District joined in the College District in 1961, and South San Francisco Unified School District was annexed in 1966.

Until the opening of her sister college, Cañada, in 1968, the College of San Mateo constituted the District, and led a nomadic life until moving to its present location in 1963.

First classes were held in a building shared with San Mateo High School in downtown San Mateo. In 1923 the College moved to a large house on the Kohl Estate, in what is now San Mateo's Central Park, and added some tents to handle the overflow attendance. Four years later the high school occupied a new campus, and the College acquired full use of its "birthplace location," known as the Baldwin Campus.

In 1939 a new College campus went into operation at North Delaware Street and Peninsula Avenue, San Mateo, but World War II put a stop to optimum development of that site. As a result, when the tide of returning servicemen began to roll in at the war's end, the College leased the Merchant Marine Cadet School at Coyote Point, San Mateo, and added those facilities to the classrooms at the Baldwin and Delaware campuses. Thus conducting classes simultaneously at three separate locations.

In 1957 the Board of Trustees developed a 25-year District master plan based on the recommendations of a Citizens Advisory Committee, and the same year submitted a \$5.9 million bond issue to the voters that was approved by an overwhelming 3 to 1 margin.

The bond issue victory cleared the way for prompt acquisition of the present College of San Mateo campus, and also provided funds for purchase of a 111-acre north site west of Skyline Boulevard and south of Sharp Park Road in San Bruno. A third site, of 131 acres west of the Farm Hill subdivision on the Redwood City-Woodside line, was purchased in 1962, and a fourth, 184 acres at Cabrillo Highway and Purisima Road south of Half Moon Bay, in 1965.

The College of San Mateo campus was opened in 1963, followed by Cañada College, Redwood City, in 1968 and Skyline College, San Bruno, in 1969. Construction of Cañada and Skyline was made possible in large part from proceeds from a second bond issue of \$12.8 million approved by the District voters in 1964. No development of the coastal site is anticipated until the late 1970s at the earliest.

When these four colleges all are in full operation, answering the educational needs of 32,000 day students and a projected 50,000 adults at night, the goal of the Trustees' master plan—to provide sufficient junior college facilities for the District for the rest of the 20th Century—will have been realized.

Philosophy and Purposes of the College

College of San Mateo has established its educational philosophy on three fundamental premises: that a free society requires intelligent support, that the individual has worth and dignity, and that a college has obligations both to society and the individual.

As a corollary to these premises, the College realizes that in its role of community college it must remain sensitive to changes in the needs of its area and evolve its educational offerings in response to those needs.

In general the purpose of the College of San Mateo is to provide education beyond the high school level for the people in its area who can profit thereby. This education is designed to help the student realize his potentialities by cultivating his cultural and vocational abilities. It prepares the student to assume the responsibilities of citizenship in our free society. It attempts to develop in the student the ability to think critically.

To achieve its purpose, College of San Mateo offers the following kinds of education:

General Education: Instruction which will assist students to function effectively as individuals, as members of their families and as citizens with local, national and world responsibilities.

Lower-Division College Education: Courses which will enable students to complete the first two years of four-year college work. These courses satisfy the lower division requirements in the liberal arts and in the scientific, engineering and other professional and technical fields.

Technical-Vocational Education: Training in skills which will qualify students for employment in business and industry.

Continuing Education: Classes in which all persons living in the area may broaden their educational, vocational and aesthetic horizons.

Community Services: Short courses, public forums, lecture series, small group discussions, institutes, concerts and similar educational and cultural programs for the public at large.

To assist each student to profit most from his education, the College helps him to explore his aptitudes, to choose his lifework and to plan an educational program which will prepare him for that work. It offers this assistance through a formal program of guidance and counseling, and through informal student-teacher relationships, which are among the most distinctive and valuable of its services. The College recognizes the educational value of the organized student activities and encourages student and faculty participation in these activities.

Situated as it is, close to San Francisco and to several fine colleges and universities, College of San Mateo is a part of a colorful community, which enjoys many cultural advantages. Many College of San Mateo graduates transfer to the University of California, Stanford University and the nearby state colleges. Because the needs of these students who transfer to upper division work are carefully provided for in the curriculum, the College enjoys a fine reputation among the universities of the state. Her graduates have consistently had a pattern of success in four-year educational institutions. Many College of San Mateo students, having terminated their formal education with the Associate in Arts degree, find employment in business and industry.

Accreditation

College of San Mateo is fully accredited by the Western Association of Schools and Colleges, the recognized local agency which is affiliated with the Federation of Regional Accrediting Commissions of Higher Education.

Revision of Regulations

Any regulation adopted by the Administration of the College of San Mateo shall have the same force as a printed regulation in the Catalog and shall supersede, upon promulgation by posting on official bulletin boards and announcement in the daily bulletin, any ruling on the same subject which may appear in the Catalog or other official bulletins of the College.

Veterans and Veterans' Dependents

College of San Mateo is listed by the Veterans Administration as qualified to receive students under Chapter 34 (veterans), Chapter 35 (veterans' dependents) and Chapter 31 (rehabilitation). All students, except those under Chapter 31, buy their own books and supplies. Those interested in attending College of San Mateo under any of these chapters should contact the Veterans Administration office at 49 Fourth Street in San Francisco or 590 Hamilton Street in Redwood City to determine eligibility for benefits.

The State of California provides a program for children of veterans who are deceased or are disabled from service connected causes. Application should be made to the California Department of Veteran Affairs at 350 McAllister Street in San Francisco.

Costs to Students

Each student purchases his own textbooks and supplies. A considerable saving is possible through the purchase of used texts from the on-campus Associated Students Store. Excluding living and transportation costs, the total of all expenses, including membership in the Associated Students, should not exceed \$75 per semester. Special equipment is needed for certain courses such as Electronics, Drafting, Engineering, Art and Architecture, involving an additional initial outlay ranging from \$25 to \$75.

In addition to other costs, non-residents pay tuition.

Tuition (Non-Resident Fee)

No tuition is charged to legal residents of San Mateo Junior College District or to students from other parts of California who qualify for admission.

Out-of-state residents pay a non-resident fee of \$900 for the academic year 1971-1972. This fee is payable at the time of registration at the rate of \$450 per semester or approximately \$30.00 per unit. Residence status will be determined by the Dean of Admissions and Registrar. Detailed regulations governing non-resident fee and admission requirements will be distributed to students who apply for admission.

Parking

Parking for students is provided on the campus in clearly designated areas. Certain parking places are reserved for visitors who have guest permits, and for faculty and staff who hold permanent parking permits. Parking and traffic regulations are enforced by the City of San Mateo Police Department. Student parking is available in lots 1, 2, 9, 10, 10A, 15, 16, 17 and part of lot 3.

College Library

Providing a panoramic view of the Bay Area, the three-story College Library is an inviting place for both students

and faculty to study and browse. On the main floor are the general book, reserve, reference, periodical and microfilm collections; on the mezzanine is the open-stack book area; on the lower floor are the non-book instructional materials. There are many tables for individual study and carrels in the open-stack areas, as well as a typing room and group study facilities. In the library collection there are approximately 85,000 volumes, 850 carefully selected periodicals and 3,000 reels of microfilm.

The lower floor houses the listening and viewing installation of 220 stations and 30 program sources. There are 37 student language laboratory booths in addition to faculty recording studios, preview rooms, photography dark rooms and a complete audio-visual aids department, all located on the ground floor. The Library's non-book materials collection contains 8,000 disc recordings, 6,000 tape recordings, 300 films and thousands of slides and filmstrips. The TV and FM radio stations also are located in the building.

The Library is open each school day, Monday through Friday, and on Sunday afternoons. Specific hours for the daily schedule and for holidays are posted at the Library entrance.

Admission Requirements

High School Graduates

Normally, graduation from high school or other schools of equivalent rank is a prerequisite for admission.

Persons over 18 years of age may be admitted to classes for which experience and maturity may, in the opinion of the President, qualify them, even though they are not high school graduates.

Any person who is not a legal resident of California or who is a legal resident of another junior college district in California should see Residence Requirements for Admission.

Transfers from Four-Year Institutions

Transfer students from four-year institutions are subject to the CSM Academic Standards Policy. (See Academic Standards.)

Transfers from Other Junior Colleges

Students who have previously attended another junior college and are in good standing are eligible to enroll at College of San Mateo, subject to residence requirements. Students who have been disqualified by another junior college will not be admitted in the semester immediately following their attendance at that junior college. After one semester's absence, such students may be admitted, subject to the Academic Standards Policy.

Former Students of College of San Mateo

Former students of College of San Mateo are eligible to return; however, if they have a grade point deficiency, they will be readmitted according to provisions of the Academic Standards Policy.

Veterans

For academic credit purposes, a veteran is defined as an honorably discharged member of the United States Armed Forces who was on active duty for one year or more. Upon presentation of discharge papers, veterans are exempt from the Health Science 1, First Aid, and Physical Education requirements for the A.A. degree. They are also entitled to six units of elective credit toward the A.A. degree.

In addition, veterans who qualify may receive credit for military service schools toward the Associate in Arts degree upon presentation of proof to the Registrar's office after the completion of a minimum of 12 units with a grade-point average of 2.0 at College of San Mateo.

Adult Students

All regular day or credit classes are open to adults who wish to attend. Adults are expected to assume the obligations and responsibilities of regular junior college students, but those 21 years of age or over are exempted from Physical Education requirements.

Special Students

A student taking a maximum of eight units and no more than two classes is designated "Special." Special students must file application by the deadline date but are not required to take the general admission tests or submit transcripts. A special student planning to enroll in an advanced course in a foreign language is required to take the appropriate placement test.

A special student who plans to transfer to a four-year college, earn an A.A. Degree, and/or a certificate and wishes to receive counseling must complete all admission requirements.

Foreign Students

(The San Mateo Junior College District Board of Trustees has placed a moratorium on the admission of new foreign students until the fall semester, 1972.)

Only those foreign students who have completed the equivalent of an American high school education with satisfactory grades will be admitted.

In addition to the above, foreign students will be required to demonstrate sufficient command of English to profit from instruction at the College. They must also present evidence that they have the necessary funds to take care of all living expenses while attending College of San Mateo (a minimum of \$150 to \$175 a month).

Application for admission for the college year (fall semester) must be completed by the first week of April.

Transfer Credits

Credit will be allowed for lower-division work done in other accredited institutions. All work presented will be evaluated by the Coordinator of Admissions.

Residence Requirements for Admission

The right to attend any one public junior college in California is, in addition to the academic requirements, conditioned by certain residence qualifications.

The legal residence of any unmarried minor student is that of the father or mother, or court-appointed guardian.

An applicant who is a resident of the San Mateo Junior College District needs only to declare his residence and complete admission requirements.

An applicant who is a resident in a part of California not included in a district which maintains junior college classes may attend College of San Mateo. A permit signed by the County Superintendent of Schools of the county of residence will be obtained by the Registrar.

An applicant who is a legal resident of another junior college district must be a graduate of a high school, or be 21 years of age or older, and must submit a written permit from the superintendent of his district of residence granting him permission to enroll in College of San Mateo.

An applicant who is a legal resident of another state must be a high school graduate with a 2.0 grade-point average in the academic courses to be eligible for admission.

Choice of College

Residents of the District may elect to attend College of San Mateo, Cañada College or Skyline College. In the event the capacity of one college is reached, students will be diverted to one of the other colleges. Major and date of application will be taken into consideration if such diversion becomes necessary.

Admission Requirements

(See 1971-72 Calendar for application filing dates.)

Prospective students applying for admission to the College of San Mateo are required to:

1. File a written application for admission upon forms supplied by the College.
2. Submit two complete transcripts of records from the high school of graduation, or last attended, and each college attended.
3. Take English, aptitude and other specific examinations necessary.

Registration

Counseling Appointments

Upon completion of admission requirements, new and returning students will be given a counseling-registration appointment prior to the opening of each semester. (See Calendar at the front of the catalog.) Regular students register only after receiving program approval from a counselor. Late registration after the first day of instruction will not ordinarily be permitted. Special students (see p. 20) register without an appointment.

Unit Load Limitations

A normal class load will be 15 units plus Physical Education. No student should take more than 17½ units without the special approval of his counselor.

Students working full time or those in the military service should limit their programs to 7 or fewer units. Combinations of work and school should be carefully discussed with the counselor.

Auditing is not permitted in any course offered for credit.

For Financial Aid, Veterans Benefits, Social Security Benefits, and Draft Deferment, 12 units is considered a full-time load.

Physical Education Requirement

All regular students are required to take Physical Education, in accordance with the State Education Code, except those who are excused for those reasons indicated below. Men and women must devote two hours per week to Physical Education throughout the period of attendance as undergraduates. The following students may be excused from the P.E. requirement:

1. Junior college graduates.
2. Students who are 21 years of age or older on the first day of the semester.
3. Students taking eight units or less in day classes.
4. Veterans, exclusive of six-month Reserve trainees.
5. Students excused for medical reasons (requires physician's statement on file in the Health Center each semester).

Every student who is exempt from Physical Education must obtain a clearance signature from his counselor or school nurse on his study card before completing registration. A full-time student who fails to register in and/or regularly attend Physical Education must immediately reduce his program to less than 9 units of day classes or have his registration canceled.

Health Service

Report of a recent health examination, given by the student's personal physician, must be turned in at the time of registration by all entering students. A card providing space for the report and for information to be used in case of emergency is attached to the admission application. Once the health card is on file, it does not need to be renewed unless there is a change in health status or emergency information.

Program Changes

No changes of program will be permitted during the period of registration.

A program once entered by signing up for any given set of classes may not be changed in any way, unless written permission to do so is granted a student by his counselor, and the student completes the prescribed change-of-program procedure.

Changes of programs will be permitted only for students who have valid reasons for such requests.

A student *may not add* a new class after the tenth day of the semester.

A student may drop a course, whether passing or failing, at any time through the 10th calendar week of a semester without incurring a penalty of a semester grade of "F"—failed. After this date, if a student drops a course in which he is failing, he will receive a semester grade of "F." For further information, see section on "Grades and Grade Points," especially the mark of "W."

Selective Service Deferments

The College cannot grant deferments; only the local Selective Service board may do this. It is the responsibility of the individual registrant to keep his Selective Service board informed of his status. The College will assist the student by

furnishing to the Selective Service boards, **at the student's request**, information that will help make that status clear.

At the beginning of each semester a report will be made indicating that the student has begun the semester and is satisfactorily pursuing a full-time course of instruction, number of units, the college year of the student, the beginning and ending dates of the semester, and the expected date of graduation of the student based upon entry date to the first college of attendance. This report is made on Form 109, and a copy of the verification to the local boards is available in the Registrar's office after the seventh week of classes.

However, the Selective Service board requires that a student make normal progress towards his bachelor's degree by completing 30 units each calendar year. This means that a student who doesn't take a normal load of 15 units each semester must take summer session course (s) to maintain his student deferment.

It is the student's responsibility to notify his local Selective Service board if he changes his study load, course of study, withdraws, graduates, is disqualified, fails to return or for any other reason changes his educational status in such a way that it might affect his draft status.

Evening Program

In addition to the classes offered in the daytime, a large number of classes are given in the evening and are available to regular day students as well as to those persons who are employed during the daytime and can take classes only at night. The daytime student may wish to enroll in an evening class in order to avoid schedule difficulties or to allow himself additional time for study during the day.

The evening program is the product of an educational philosophy which asserts that the College of San Mateo shall serve not only the young people of the community but that it should provide educational opportunities for its adult members as well. It provides opportunities to resume interrupted education and to investigate new fields of interest; to take college courses leading to an Associate in Arts degree or for transfer credit; to complete requirements for a certificate program; and for general continuing education for self-improvement and enriched living.

Classes in the evening program are open to persons who are over 18 years of age or who are high school graduates. Students currently attending a high school full time are not admissible to evening classes. Students attending high school part time must have the CSM Registrar's permission to attend evening classes. In credit classes, all students must enroll for the prescribed number of units, complete the required work and be assigned a grade; no auditors are allowed. All units earned in credit classes are applicable toward the Associate in Arts degree. Registration procedures are included in the Schedule of Classes, which is distributed

through local libraries about four to six weeks prior to the beginning of each semester (see Calendar).

Certificate programs, planned mutually by the College and Advisory Committees, are available in the evening and include: Ornamental Horticulture, Vocational Gardening, Real Estate, Fire Science Training, Police Science, Teacher Assistant, Library Technology, Building Inspection, Nursery School Aide, Aeronautics, Secretarial, Business Management, Business Merchandising. These certificates are issued upon completion of required and elective courses, and the units earned in them may be applied toward the Associate in Arts degree for those persons who wish to continue their education.

Separate brochures are available at the Information Office in the Administration Building for outlines of programs, course descriptions, explanations of programs and certificate requirements. At the beginning of the final course required for a certificate, it is the responsibility of each candidate to file an application in the Registrar's office (see Calendar).

Evening Attendance Regulations

Students are expected to attend each meeting of the class in which they are registered. In the event that an absence is unavoidable, it is the student's responsibility to check with the instructor for assignments and class work missed. Failure to do so may endanger his passing the course. The instructor has the responsibility of dropping or failing a student for excessive absences.

Evening Withdrawal

A student who finds it necessary to withdraw from a class at any time after registration must obtain an "Application for a Permanent Leave of Absence" from the Registrar's office. A student may drop a course, whether passing or failing, at any time prior to the end of the tenth week of the semester without incurring a penalty of a semester grade of "F"—failed. After this date, if a student drops a course in which he is failing, he will receive a semester grade of "F."

Evening Final Grade Reports

Final grade reports will be mailed to all evening students enrolled in credit classes. Please do not call the office for this information at the close of the semester. Mid-term grade reports will be mailed to students receiving grades of "D," "F" or "Incomplete" at the mid-term period.

Evening Disqualification or Dismissal

All evening students must maintain a cumulative grade point total that is double the total units undertaken ("C" grade average). Failure to do so is considered a deficiency. A stu-

24/Registration (Continued)

dent will be disqualified if at any time his deficiency amounts to 12 or more grade points. A disqualified student must remain out of both day and evening classes for one semester. A previously disqualified student who increases his total deficiency will be dismissed and will not be permitted to return to the College.

A disqualified student may present a written appeal to the Standards Committee requesting reinstatement if his disqualification was the result of unusual or emergency circumstances. A dismissed student may petition for readmission only after the lapse of at least two semesters and on presentation of evidence of academic work or other constructive achievement during this period. Students who have been disqualified or dismissed may not enroll in day, evening or summer classes without written permission from the Standards Committee.

Evening Fees

A registration fee of \$10.00 per course is required of all adults; this fee is not refundable or transferable. Resident students under 21 are admitted free. Certain courses have additional fees covering special supplies, services or equipment which are payable by both adult and minor students.

Payment of the \$10.00 fee must be made by check or money order at the time of registration. Make checks and money orders payable to the SAN MATEO JUNIOR COLLEGE DISTRICT. Where checks are returned for insufficient funds by the bank, a \$1.00 service charge will be added.

Out-of-District Students

With the single exception of residents of San Francisco, students whose legal addresses are in another junior college district are required to present a release from that district before being allowed to register in any evening class. This release must be presented at the time of registration as places cannot be reserved for students who intend to secure a release at a later date.

Out-of-State Students

Out-of-state students may register in evening classes, but will be billed by the College Admissions office at the rate of \$30 per unit for credit courses and per scheduled hour for non-credit courses.

Foreign Students

Students who are legal residents of another country and

are in the United States on other than immigrant visas may not register in evening classes without the approval of the Registrar.

Evening Testing

The School and College Aptitude Test (SCAT) and Coop English Test are administered once each semester on an optional basis for students planning counseling appointments.

Residence Requirements

See "Residence Requirements" for day classes.

Veterans in Evening Classes

See "Admission Requirements" for day classes.

Evening Registration

Registration for classes and dates of registration are described in detail in the class schedules for spring semester, summer session and fall semester. No registration takes place in the classroom except for off-campus classes. Registration in credit classes is closed before the second class meeting. It is recommended that beginning students with full-time occupations do not enroll for more than two evenings per week. No auditors are permitted.

High School Diplomas

The College does not issue high school diplomas. Students who wish to complete requirements for the diploma should consult the high school they last attended to determine graduation requirements. College courses used to satisfy a high school diploma requirement may not be used toward a college degree. Students who are unable to make arrangements with their previous high schools can contact the office of the high school district in which they now reside. Counseling services for high school diplomas may be obtained by persons living in the San Mateo Union High School District by phoning 347-9878 and asking for the Adult Education Counselor.

Transcript Requests

An official transcript which summarizes a student's complete record at College of San Mateo may be requested from the Office of Admissions and will be mailed directly to another college, an employer or other institution. Official transcripts will not be issued to students. Student unofficial copies may, however, be requested.

There is a \$1 charge for every transcript request. Requests must be made in writing.

Evening Schedule of Classes

A separate schedule of classes offered, indicating times, days and locations, is printed for each semester and is available prior to the registration dates at College of San Mateo and the public libraries. While the basic program in the evening is similar from year to year, the specific classes presented at any given time may vary from those of the previous semester. For offerings of any given semester, consult the current schedule of classes.

Evening Counseling

Every effort is made to assist students in the wise choice of individual courses, major fields and even career goals. The services of professional counselors are available during registration and from 6:30 to 9:30 p.m., Monday through Thursday, throughout the academic year. Anyone who wishes indi-

vidual counseling should bring transcripts of previous work to his interview. Contact the Registrar's office for appointment.

Group counseling sessions, giving general information about college degrees and the organization of college programs, are scheduled each semester prior to registration. The schedule of classes lists times and location of these sessions.

"Vocational Guidance and Counseling," a three-week course comprised of batteries of tests and their evaluation, is offered at least twice each semester. For further information call Community Services (574-6544).

Summer Session

A balanced offering of day and evening summer session classes enables students to accelerate their programs or to satisfy course or curriculum requirements. The Summer Session also affords opportunity for honor high school students after completing their junior year to take a number of selected college courses. Further information may be obtained by calling the College of San Mateo, Information office, or contacting the high school counselor.

Grades and Scholarships

Units of Work and Credit

A "unit" represents one hour weekly, during one semester, in lecture or recitation with the necessary preparation time, or three hours in laboratory or other exercises not requiring home work for preparation.

A normal schedule of 15 college units presupposes that the average student will devote approximately 45 hours per week to class attendance and preparation.

Grades and Grade Points

Once a subject has been made a part of a student's program of attendance, his record for the subject will be reported to the Registrar by one of the following symbols:

A—Excellent	4 grade points per unit
B—Above average	3 grade points per unit
C—Average	2 grade points per unit
D—Passing; below average	1 grade point per unit
*CR—Credit	0 grade points per unit
*NC—No credit	0 grade points per unit
F—Failed	0 grade points per unit
Inc—Incomplete	0 grade points per unit
W—Withdrawn	0 grade points per unit

*Used in courses in which grades of only "credit" or "no-credit" are given. The units for credit count as units completed. No-credit means the student is not charged with units attempted and is not credited with units completed.

A grade of "incomplete," meaning deficient in quantity though adequate in quality, may be given in case of absence from required examinations or in case of circumstances which warrant granting the student additional time in which to complete the work of the course. A student reported "Inc." in any subject must remove the deficiency by the end of the next semester. Additional time may be provided upon approval of the instructor and the Registrar, however, the extension of time may not exceed one calendar year from the date of issuance of the "Inc." The units for "Inc." grade are not charged as units attempted and do not enter into the computation of grade-point average.

A grade of "W," meaning withdrawn from class, indicates that the subject so marked has been cancelled from the student's study list and is, therefore, not to be awarded a final grade. No credit can be counted in subjects for which a "W" is recorded, nor is there any penalty involved.

The g.p.a. (grade-point average) is determined by dividing the total number of grade points earned by the total number of units attempted.

Repeated Course Policy

Ordinarily, units for a course which was completed and then repeated will not be counted as units earned toward an A.A. degree or for transfer to another college. However, a student who has received grades of "D," "F," or "Inc" for courses taken at the College of San Mateo may repeat these courses at the College of San Mateo and upon petition have the grade of the repeated course be used in computation of his grade point average. Petitions are available in the Office of the Registrar.

Final Examinations

Final examinations are required and will be given in accordance with the final examination schedule. The final examination schedule is printed in the class schedule so that students may plan their programs to avoid conflicts or an extensive load.

Grade Reports

On the college level, a student is held responsible for his own academic progress. Grade reports are sent directly to each student at mid-semester. Following final examinations at the end of the semester, the student is sent the report of his final grades, which serve as the basis for computing the student's standing.

Scholarship Honors

College of San Mateo is affiliated with the State Junior College Honorary Scholarship Society, Alpha Gamma Sigma. The local chapter is the Eta Chapter.

Temporary membership in the local society is awarded for each semester following that in which the student receives a minimum of 42 grade points (not counting Physical Education) in not less than 12 units, has no grade below a C (counting Physical Education) and has a 3.0 grade-point average for all work completed in the semester. Temporary membership for any semester is limited to 10 per cent of the number of students enrolled in the College in the preceding semester.

Life membership in the State Society is awarded upon graduation if the student has been a member of the local chapter during any three of four semesters, has a minimum total of 198 grade points, a grade-point average of 3.3 and no grade below a C (course restrictions as above). A grade-point average of 3.5 for all work undertaken in the College and a minimum total of 210 grade points may be substituted for the above requirements. The student receiving the certificate of life membership must be of good character.

Honors at Graduation

Honors are awarded to students at graduation who qualify as members of Alpha Gamma Sigma for three of four or four of five semesters while in attendance at College of San Mateo.

Credit By Examination Policy

A regularly enrolled student may be permitted to obtain credit by examination in subject matter fields in which he is especially qualified through previous training for which credit or advanced placement has not previously been given.

A student will not be permitted to challenge a course for credit by examination until he has completed a minimum of 12 units with a 2.5 grade-point average. Challenge is limited to those courses recommended by the Divisions and approved by the Dean of Instruction. The examination may include written, oral, or skill tests or a combination of all three,

and will be sufficiently comprehensive to determine that the student has essentially the same knowledge and skills as a student who successfully completes the course. The grade received will be entered on the student's record.

Letters requesting to challenge a course for credit by examination must be submitted to the Academic Review Committee.

Academic Review Committee

The Academic Review Committee has as its purposes and responsibilities the evaluation, enforcement, interpretation, and the recommending (for cause) of exceptions to academic regulations. Petitions must be submitted through the student's counselor and the Office of the Dean of Students.

Transcripts

Official transcripts will be sent to employers, colleges and other institutions upon written request by the student. Only courses taken at College of San Mateo will appear on the transcript. Transcripts from high schools and other colleges will not be forwarded.

There is a \$1 per copy fee for each transcript requested.

Personal Recommendations

Personal recommendations should be a part of each student's permanent record file. Students should request these recommendations from their instructors; recommendation forms are available from the Office of Admissions and Registration.

Academic Standards

Grade-Point Deficiency

The Academic Standards Policy of College of San Mateo is based on a cumulative grade-point average of "C," the minimum standard of progress toward graduation or transfer.

All units and grade points are on a cumulative basis. At all times, a student must maintain a cumulative grade-point total that is double the total units undertaken (C average). (Example: If a student undertakes $12\frac{1}{2}$ units in one semester and $15\frac{1}{2}$ units in a second semester, his cumulative units are 28, requiring a grade-point total of 56.)

Any grade-point total less than twice the attempted units is regarded as deficient.

Disqualification

A student will be disqualified if, at any time, his deficiency amounts to 12 or more grade points. A disqualified student must ordinarily remain out of College of San Mateo day and evening classes for one semester.

A disqualified student may present a written appeal to the Standards Committee requesting immediate reinstatement if his disqualification has resulted from unusual, emergency circumstances.

Dismissal

A previously disqualified student who incurs a deficiency in any subsequent semester will be dismissed and ordinarily will not be permitted to return to College of San Mateo for day or evening classes. However, if a student has not increased his total deficiency after disqualification, he may petition the Standards Committee for permission to continue in College.

Immediate readmission of a dismissed student is not considered. Only after the lapse of at least two semesters may a dismissed student petition for readmission; then consideration is given only on the basis of evidence of academic work or other constructive achievement during the student's absence from College.

Transfer Students

A transfer student who enters with a deficiency of 12 or more grade points will be dismissed if he incurs a grade-point deficiency in any subsequent semester. However, a transfer student who has not increased his total deficiency after admission to College of San Mateo may petition the Standards Committee for permission to continue in College.

Student Obligations

Conduct

The principle of personal honor is the basis for student conduct. The honor system rests on the sincere belief that the college student is mature and self-respecting, and can be relied upon to act as a responsible and ethical member of society. Each individual has the obligation to observe the College code of rules and regulations.

Social or other functions using the name of the College are thereby identified as College functions and become subject to the same high standards of conduct and of supervision, whether conducted on or off the campus.

Social or other functions for which no patrons are listed from the membership of the faculty are not school functions. Further, no off-campus organizations may use the College name or imply College sponsorship in any publicity or other information.

Any student may be suspended and/or recommended for expulsion if his actions on campus are disruptive of orderly and peaceful conduct of the College or in flagrant violation of College rules and regulations. In case of disciplinary action, the student will have access to established appeals procedures.

Secret Organizations

Sororities and fraternities and other secret organizations are banned under the Education Code of the State of California. It is the policy of College of San Mateo to dismiss students when their membership in such organizations becomes known.

Fines

Fines are assessed for failure to comply promptly with library and other campus regulations, and students are required to pay for careless or unnecessary damage to College property. Students who are delinquent in their financial obligations to the College may not receive grades, reports or other records of their work until such delinquencies have been adjusted to the satisfaction of the College authorities.

Attendance Regulations

Regular attendance in class and laboratory sessions is

an obligation assumed by every student at the time of his registration. By being absent from class, the student misses both the content of the particular session and the continuity of the course as developed in a single period of work. When a student's failure to attend class places his success in jeopardy, the instructor may drop the student from class.

The following regulations regarding attendance have been approved by the Board of Trustees and will be enforced:

A student may be dropped from class whenever his total hours of absence from class equal twice the number of hours the class meets in one week. Absence means non-attendance, and includes non-attendance for illness, participation in school-sponsored activities or personal emergency.

Any student dropped from any class because of this regulation may appeal in writing to the Attendance Committee within five school calendar days of such drop if he feels there are extenuating circumstances beyond his control which justify his remaining in class. A student making such an appeal may, with the permission of the instructor, remain in class until the decision of the Attendance Committee is reached. The attendance Committee will make a recommendation to the instructor after considering such an appeal. In all cases the decision of the instructor is final.

Emergency Leave of Absence

Absences for medical reasons of less than one week need not be reported to the College.

Students who will be absent from any class or classes for one week or longer for any health reason are required to request emergency leave from the Student Health Center. Students should report to the Health Center for a clearance before returning to classes.

Students who will be absent from any class or classes for one week or longer for other personal emergencies are required to request an emergency leave from the Dean of Women or Dean of Student Affairs.

If medical or personal emergency requires absence of as much as two weeks, it will be necessary for the student to consult with his counselor to review his program and the advisability of continuing in classes.

Withdrawal from College

A student finding it necessary to withdraw at any time after registration must obtain a petition for withdrawal from his counselor. Special students (taking one course only) should report to the Dean of Women for a withdrawal petition. The completed form must be returned within five college days to the Dean of Women. Failure to comply with the procedure may result in penalty grades of "F".

At any time through the 10th College calendar week a student may withdraw, whether passing or failing in courses, without incurring penalty grades of "F." A student who withdraws after the deadline will receive the penalty "F" for any course in which he is failing.

Absence Without Leave

Any student who leaves College at any time during a semester must complete a formal withdrawal within a period of one week or be subject to academic penalty.

Student Services

STUDENT SERVICES AND ADMINISTRATIVE AFFAIRS

Dean of Students

Allan R. Brown

Associate Dean of Student Services

Philip D. Morse

Associate Dean of Student Affairs

Herbert R. Warne

Director of College Readiness Program

David Thomas

Foreign Student Adviser

Gerald Frasseti

Dean of Women

Ruth Weston

Psychological Services

Charles Devonshire

Noel W. Keys

Health Services

Yolande Hilpisch

Testing Services and Occupational Library

Edmond O. Shinn

COUNSELORS IN MAJOR FIELDS OF STUDY

Aeronautics

Mr. Nystrom

Mr. Dale Blust

Architecture

Mr. Multhaup

Art

Mr. Daniels

Mr. Allende

Business Administration

Dr. Justice

Dr. Montgomery

Business

Miss Stetson

Miss Mulhall

Mrs. Davidson

Mrs. Hopkins

Dr. Justice

College Readiness Program

Mr. Mantabe

Mr. Orozco

Miss Reynolds

Cosmetology

Mrs. Bush

Data Processing

Mr. Crawford

Dental Assisting

Mrs. Langston

Drafting Technology

Mr. McClure

Education

Mr. Murphy

Mr. M. Alexander

Electronics Technology

Mr. Angerbauer

Mr. Hecomovich

Engineering

Mr. Clemens

Mr. Crawford

Mr. Multhaup

General Education

Liberal Arts, General Education, No Major Program, Special Program, Undecided Major Program

Mr. Fishback

Mrs. Hazelton

Mr. Howe

Mrs. Fountain

Mr. Shinn

Mrs. Weston

Mrs. Lehman

Mr. M. Alexander

Mr. Clinkscapes

Home Economics

Mrs. Weston

Mrs. Ireson

Immigrant Students

Mr. Wagner

Inner College

Mr. Short

Language Arts

Dramatics, Radio, Telecommunications, Speech, English, Foreign Languages, Journalism

Mrs. Hazelton

Mr. Murphy

Mr. Short

Mrs. Lehman

Mr. Hecomovich

Life Sciences

Mr. Monroe

Mr. Clemens

Mr. J. Williams

Manufacturing Technology

Mr. McClure

Mr. Martin

Mathematics

Mr. Crawford

Music

Mr. Marshall

Nursing

Mrs. Grubbs

Physical Education

Mr. Hudson

Mrs. Fountain

Physical Sciences

Mr. Glen

Mr. Clinkscales

Real Estate

Mrs. Hopkins

Social Sciences

Mr. Phipps

Mr. Richmond

Mr. M. Alexander

Mr. Wagner

Mr. Goss

**Technical Illustration, Machine Tools Technology,
Welding Technology**

Mr. McClure

Mr. Martin

Program Planning, Counseling and Psychological Services

Certain faculty members are officially designated as counselors to students. Each regular student will be assigned a counselor who is a specialist in his field. Counselors are available by appointment during the registration period and throughout the academic year to consult with students. Counselors assist students in planning programs of study, must approve the final program for each semester and must be consulted about changes. However, each student is responsible for fulfilling his own graduation and/or transfer requirements.

The Student Personnel Office will make appointments for interviews with counselors for the purpose of assisting students in the selection of a course of study with relation to a career or profession and to complete registration.

When a student receives an academic deficiency notice indicating unsatisfactory work, he is to see his counselor concerning reasons for his lack of progress.

All faculty members are an important part of this College's advising program. Students should feel free to approach counselors and other faculty members for information.

Psychological Services are available to all students at the College. Appointments may be made through a counselor, the Office of Student Services or directly by the student with the school psychologist.

Testing

The Office of Student Services maintains a service in psychological and vocational testing which is available to all registered students. Through this service, students may receive assistance in assessing their aptitudes and interests so that they may better plan their educational and vocational goals.

The Guidance 10 course carries transfer credit to state colleges and some universities and is optional for all students. It is recommended for all entering students. It offers the following personnel services:

1. **Further testing services:** A thorough explanation and interpretation of psychological tests taken at entrance are given each student. Additional psychological tests are given to the student to help him appraise his aptitudes, interests, personal adjustment and special abilities, and to assist him to verify or to make effective educational and vocational plans.
2. **Introduction to College:** The course is also designed to acquaint students with College facilities, activities, services and requirements; to improve study habits and skills, to develop leadership techniques, and to explore the world of work in areas which meet their individual interests and abilities.

Health Service

Counseling on health problems is available at the Student Health Center.

Report of a recent health examination, given by the student's personal physician, must be turned in to the Health Center at time of registration by all entering students. This examination will determine not only the student's fitness for Physical Education but also the type of activity best suited for his specific needs. A card providing space for this report and also for information to be used is attached to the admission application. The card must be completed.

First aid is given in cases of injury. The student is then referred to his physician. An ill or injured person who is unable to communicate will be sent to the emergency room at Chope Community Hospital if his health card is not complete and the family cannot be reached.

Student Health Insurance Plan

The College offers accident and health insurance coverage to its students on a voluntary basis. Most students are over 18 years of age and are no longer covered by their parents' group insurance policies. Additional information and literature can be obtained in the Student Health Center.

Placement Services

The College maintains a placement office to assist students currently enrolled and in good standing to secure part-time employment. This service is also available to graduating and former students who wish to secure full-time employment. College personnel are available throughout the day for placement services.

Housing

Neither dormitories nor other types of College-sponsored housing are available at College of San Mateo. The Dean of Women and Dean of Student Affairs will assist students in finding accommodations in private homes. A few opportunities exist for students to earn room and board in return for 15 hours of work per week; information regarding such openings is available from the Placement Office.

Financial Aids

College of San Mateo participates in federal and state scholarship, loan, grant and work-study programs. Work-study placement is available in both on-campus and community jobs related to the student's course of study. In addition, the San Mateo College Foundation administers funds from private sources which are available to students as scholarships, loans and grants. The Associated Students have made a lim-

ited loan fund available to students who have an emergency need.

Students must be enrolled in 12 units to be eligible. For detailed information and application for financial aids, students should contact the Financial Aids Officer, Administration Building, Room 221. Scholarship applications are available through the Dean of Women's Office, Administration Building, Room 217. Small emergency loan applications are available through the Dean of Women's Office and the Dean of Students, who will assist students eligible for loans from Associated Student funds.

College Readiness Program

The College Readiness Program is a multi-cultural program, designed to assist students in obtaining a higher education even if they may not possess a high school diploma. The only requirements are that a student be 18 years old, a resident of San Mateo County and able to profit from the instruction. There are four types of financial aid qualified students may seek—Educational Opportunity Grant, National Defense Student Loans, Work Study, and the Federally Insured Loan Program. Students can also receive emergency financial aid when funds are available.

Additional assistance is available to students in the tutorial program in which the tutors are fellow students who can easily relate to the problems of the student being tutored. Tutoring is on a one-to-one basis and covers all of the academic areas available at College of San Mateo. But the most important part of the College Readiness Program is counseling. Counselors are Third World people and can easily relate to, identify with, and understand the student. Counselors are able to act as models to counselees, and—more importantly—are able to strike up a relationship and friendship that is warm and realistic.

The CRP offices also serve as a meeting and study area for the program's multi-cultural students. The CRP is located in Building 20. All personnel can be contacted at any time of the day. Additional information is available by phoning 574-6154.

Activities

The student activities program is an important part of the educational experience at the College of San Mateo. All registered students are encouraged to participate in the various offerings of the activity program.

With the assistance of faculty advisers, Student Council directs and supervises many activities in which the College is represented. Because the direct financial support for student activities comes from purchase of Activity Cards, each student is encouraged to purchase a card.

Organizations

In order to secure the most from his College life, a student should participate in one or more of the many clubs organized within the Associated Students. The clubs listed below offer many and diversified opportunities to students for both social and educational contacts. Each club elects its officers and plans its own program for the semester. How successful it becomes depends largely upon the enthusiasm of its membership. The student is advised to contact the sponsors, whose names appear below, for further details about the club or clubs in which he may be interested. Additional information may be obtained by contacting the Student Activities Office.

Alpha Eta Rho

(Aviation)

Mr. Zempel

Alpha Gamma Sigma

(Honor Society)

Mr. Acena

Mrs. Murashige

Alpha Phi Omega

Mr. Gum

Mr. Olson

Mr. Turner

Arab Student Organization

Mr. Kirk

Asian American Student Alliance

Miss Shih

Associate Degree Nurses

Mrs. Grubbs

Ass'n of Technical Draftsmen

Mr. Chowenhill

Black Students Union

Mr. Ferguson

Business Club

CAPHER

Miss Ingraham

Christian Science Organization

Mrs. K. Burton

Ceramic Club

Mr. Rascon

Mr. Anderson

Circle K

Mr. Morse

Collegiate Christian Fellowship

Mr. Anderson

Dance Club

Mrs. Banks

Deseret Club

Mr. Angerbauer

Education Club (SCTA)

Mr. M. Alexander

Epsilon Delta

(Dental Assisting)

Mrs. Rue

Mrs. Langston

Eta Epsilon

(Home Economics)

Mrs. Ireson

Hillel

Mr. Gattmann

International Relations Club

Mr. Frassetti

L.V.N. Vocational Nurses

Mrs. Harrington

MECHA

(Brown Students Organization)

Mr. Villarreal

Newman Club

Mr. DeGregorio

Opera Club

Mr. S. Cooke

Partisans

Mr. Grossenbacher

Peninsula Plungers

Mr. Fark

Psychology Club

Mr. Devonshire

Radio and TV Guild

Mr. D. Montgomery

Mr. Odum

Republican Club

Rifle and Pistol

Mr. H.S. Williamson

San Mateo Amateur Radio and Electronics

Mr. Hecomovich

Sierra Club

Mr. Hardt

Sinawik

Mrs. Myers

Ski Club

Mr. Young

Symphonic Band

Mr. Bardes

The "Company"

Veterans Club

Mr. Davis

VICA/Cosmo

Mrs. Casstevens

Mrs. Stock

Vocational Nurses Club

Mrs. Grubbs

Young Democrats

Mr. Hynding

STUDENT ASSOCIATIONS

Inter-Club Council

Mr. Darro

Associated Men Students

Mr. Balsley

Associated Women Students

Mrs. Weston

Recreation Association

Miss Silva

Mr. Balsley

Judicial Council

Mr. M. Clemens

Student Council

Mr. A. Brown

Mr. Darro

Those listed above are the only organizations sanctioned by College of San Mateo.

Publications

The following publications are issued by the College of San Mateo:

The San Matean—A student newspaper published weekly, serving a two-fold purpose of providing full coverage of activities on campus and of giving experience to journalism students.

Student Guide—A manual for students containing information about College of San Mateo, the rules, staff, student organizations and services.

Vintage—A student feature and literary magazine published each spring, sponsored jointly by the Associated Students and the English Department. Each year the "Vintage" provides a show case for the talents of the creative writing and art classes, as well as informative and timely articles by other interested students.

Student Bulletin—A mimeographed publication prepared and distributed by the Activities Office every Monday, Tuesday and Thursday, announcing activities, news events and items of interest to the faculty and students of the College. The deadline for submission of items for publications is 10 a.m. on the preceding day.

Athletics

The College sponsors the major sports within the Golden Gate Conference for the benefit of those students interested in team competition.

College of San Mateo adheres to the California State Athletic Code and the Golden Gate Conference eligibility rules and regulations. Final decisions rest with the Golden Gate Conference Commissioner or the California State Athletic Committee.

The following basic principles pertain to all matters of eligibility:

1. No student shall represent his college in any athletic contest unless he is enrolled in and is passing at all times in a minimum of 10 units of work in addition to Physical Education (if required) in a regular or special course as defined in the curricula of his institution. Periodic scholastic checks shall be made to comply with this rule.
2. In meeting the units-of-work requirement, subjects which have been failed may be repeated, but those that have been completed with a passing mark may not ordinarily be repeated and included in meeting this requirement.
3. In order to be eligible, a student who has previously attended college must have completed, in his last term or semester of attendance, at least 10 units of work in addition to Physical Education (if required).

Recreation Association

Throughout the year this association offers a variety of co-educational sports and recreational activities. Included are monthly "Co-Rec Nights" with the Physical Education facilities open for recreational use; "Sports Days" offer competition with groups from neighboring colleges and universities, and special tournaments or events are scheduled periodically during the year.

Graduation Requirements

Associate in Arts Degree

Graduation from College of San Mateo with the Associate in Arts degree is based upon the completion of 60 units of lower-division college-level work, including the requirements listed below, the last 12 units of which must be completed at this institution. A student is required to have an overall grade-point average of 2.0 (or a 2.0 grade-point average on his last 12 units of work).

- 11 U.S.: Economic History (3)
- 24 U.S.: American Foreign Policy (3)
- 25 U.S.: The American West (3)
- 26 U.S.: 20th Century American History (3)
- 33 U.S.: The Afro-American in U.S. History (3)
- 34a U.S.: The Afro-American in U.S. History to 1865 (3)
- 34b U.S.: The Afro-American in U.S. History after 1865 (3)
- 35 U.S.: Civil War and Reconstruction (3)

Application for Graduation

At the beginning of the final semester, it is the responsibility of each candidate to file an application for graduation (refer to Calendar for the College Year for deadline). Below are the requirements in brief, followed by explanatory paragraphs:

Subject	Units
American History and Institutions; California Government	5-8
English	6-8
Health Education (Health Science) and First Aid	2-3
Physical Education	2
Major (in a specified field)	20
General Education	6
Electives	12-20
 Total Units	 60

History and Government

This requirement may be satisfied in two different ways: (a) by completing either Political Science 25—National, State and Local Government (5 units)—or, for foreign students only, Political Science 27—American Society (4 units)—or (b) by completing one of the listings in each of the following groups:

Group 1—American History and Institutions

- a. History 17a-17b—American History (6 units), or
- b. Political Science 21—American Institutions (3 units), or
- c. Political Science 22—American National Government (3 units), or
- d. History 4a-4c—Western Civilization (6 units), or
- e. History 99—Historical Geography, and History 17a or 17b (6 units), or
- f. History 17a or 17b plus any 3-unit history course labeled "United States:"

Group 2—California State and Local Government

- a. History 23b—California History (2 units), or
- b. Political Science 23—State and Local Government (2 units), or
- c. Political Science 12—State and Local Government (3 units), or
- d. History 22—California History (3 units), or
- e. Sociology 12—Urban Development (3 units)

English

At least two semester courses (the second of these may be in Speech) for a minimum total of 6 units. One of these shall be English 60 or 61, 10 or 11. Other courses shall be selected from the following:

English: 2, 9a-9b, 12a, 12b, 12c, 12d, 13, 14, 20, 21, 22, 23, 24, 25, 26, 27, 30, 31a, 31b, 42a, 42b, 43, 46a, 46b, 48, 51, 52a, 52b, 53, *57a, *57b, 62a, 62b, 62c, 62d, 63, 65, 66, 68, 74, 75.

Speech: 1a, 2a-2b, 4, 5, 27, 33, *57a-57b, 62.

*For students with English as a second language.

Health Education and First Aid

All students are required to take Health Education 1. In addition, each student must show that he has completed an acceptable course in First Aid. Most students who have graduated from a public high school in California since 1952 have completed the First Aid requirement.

Veterans may receive credit for these courses by presenting to the Registrar their discharge papers showing honorable discharge and active service of one year or more in the United States armed forces.

Physical Education

A minimum of 1/2 unit each semester for two hours of Physical Education taken each week throughout the period of junior college attendance prior to graduation is required under the State Law of California, unless the student is legally exempted therefrom as indicated under "Registration, P.E. Requirement" in this catalog. The student must receive a passing grade for each required semester of P.E.

Major

A student's major consists of at least 20 semester hours in a specified field of study. A field of study is understood to be a specific subject with such supporting subjects as may properly be used to round out the training in preparation for a major or for some particular occupation. For students planning to transfer to four-year institutions, fulfillment of lower-division requirements for the institution of their choice will be considered a major.

General Education

General Education is the part of a program of studies which introduces the student to areas of study that develop breadth of outlook and contributes to his balanced development. This training is complementary to, but different in emphasis from, the specialized training he receives for a job, a profession or high scholastic attainment in a particular field of study.

The purpose of the program in General Education is to assist the student in moving toward the following goals:

1. Developing a sound moral and spiritual code for his personal and civic life as a responsible citizen in a democracy.
2. Developing critical and constructive thinking for problem solving and value discrimination.
3. Maintaining good mental and physical health for himself, his family and his community; developing balanced personal and social adjustment, satisfactory home and family life, and vocational adjustment.
4. Using basic mechanical, mathematical and communication skills to solve everyday problems, understand ideas of others and express his own ideas effectively.
5. Understanding his cultural heritage and his interaction with his biological and physical environment.
6. Understanding the creative activity of others and participating to some extent in creative activity of his own.

Graduation requirements for the transfer student are as follows:

1. P.E., Health Education and First Aid.
2. Two semesters of English (6 units).

3. American Institutions, and State and Local Government.
4. Additional General Education courses as specified by the institution to which the student plans to transfer.

Graduation requirements for the two-year student are as follows:

1. P.E., Health Education and First Aid.
2. Two semesters of English (6 units).
3. American Institutions, and State and Local Government.
4. A major of at least 20 units.
5. A total of six units outside his area of concentration, including at least one course in science or mathematics and one course in the humanities or personal growth, selected from the list of General Education courses which follow. Students will confer with counselors to determine courses best-suited to meet individual needs.

General Education Courses in Mathematics and Science for the A.A. Degree

Aeronautics 1, 10;
 Architecture 10, 14;
 Art 14;
 Astronomy 1a, 10;
 Biology 1, 2, 3, 4, 5, 7, 11, 15, 16, 18a, 18b, 19, 20, 21, 22, 23, 24, 25, 30, 31, 33, 35, 37, 38, 40;
 Business *50, 51, 66;
 Business Administration 1a;
 Chemistry 10, 30a, 51;
 Data Processing 60;
 Drafting 14;
 Electronics 10;
 Engineering *4;
 Geography 1a;
 Geology 1a, 10;
 Horticulture 50a, 50b;
 Mathematics 10, 11, 12, 14, 55;
 Meteorology 1, 10;
 Paleontology 1;
 Physical Science 10;
 Physics 2a, 10;
 Psychology 7.

*Designates partial fulfillment of requirement (3 units).

General Education Courses in Humanities and Personal Growth for the A.A. Degree

Anthropology 2, 3;
 Art 1a, 1b, 1c, 2a, 2b, 8, 10, 19, 40, 68a, 68b;
 Business 10, 35, 58, 81, 82, 84;
 Business Administration 18a;

38/Graduation Requirements (Continued)

Drama 1a, 1b, 2a, 2b, 10;
Economics 1a, 1b, 5, 7, 10, 11;
Foreign Language 39, 40, 41, 42;
French *100a, *100b, *100c;
Geography 1b, 4, 5a;
German *100a, *100b, *100c;
Guidance *10;
History 4a, 4b, 5, 20a, 20b, 23a, 25, 30, 34a, 34b, 44, 45, 46;
Home Economics 1a, 1b, 9, 20a, 20b, 22, 24, 26, 40, 45;
Italian *100a, *100b, *100c;

Journalism 1;
Music 3, 6, 7, 8, 9;
Philosophy 6a, 6b, 24a, 24b, 7, 8, 20a, 20b, 23, 50;
Political Science 1, 2, 3, 9;
Psychology 1a, 4, 10, 14, 33;
Sociology 1, 2, 3, 4;
Spanish *100a, *100b, *100c;

*Designates partial fulfillment of requirement (3 units).

Program Planning

Each student enrolling at College of San Mateo should plan a program of studies which will meet his educational goals. His objective may be to transfer to a four-year college or university. Depending on the program he follows, he may also receive an Associate in Arts degree from College of San Mateo. On the other hand, his objective may be to enter an occupational field after becoming qualified through one of numerous Associate-in-Arts-degree programs or through one of several certificate programs.

If in the course of his enrollment at College of San Mateo, he finds it advisable to change his program of studies, he may do so, in conference with his counselor. However, he should be aware that any changes may result in extending the time necessary to fulfill all requirements.

The student has the responsibility for planning his program.

Transfer Programs

The student who intends to transfer to a four-year college or university or to another educational institution should consult the catalog of that institution to ascertain requirements for graduation.

College catalogs and occupational information on file in the Occupational Information Library are accessible to the student upon request. The student may write directly to the registrar or dean of admissions of the college of his choice to obtain catalogs, circulars of information and other data concerning required subjects.

Transfer of Credit

A student expecting to transfer to a state college, private college or university can usually complete the first two years of his work at College of San Mateo. If all requirements have been met, students transferring to higher institutions may graduate in two years of further study. The student may decide to spend more than two years at College of San Mateo or transfer to a four-year institution with less than junior standing. In any event, it is important that he consult with his counselor in order to arrange a program which will meet the requirements for transfer to the institution of his choice.

The earlier a student makes a decision regarding a higher institution to which to transfer, the better are his chances for meeting all requirements without delay. If he is

unable to make this decision when he enters College of San Mateo, he may elect to follow the requirements shown in the curriculum of the College of Letters and Science of the University of California, Berkeley.

High school subject deficiencies may be made up at College of San Mateo in order to meet course prerequisites at college level. In some instances the student may qualify for transfer to the college of his choice by maintaining an acceptable grade-point average at College of San Mateo without having met high school deficiencies.

California State Colleges

GENERAL EDUCATION REQUIREMENTS

There are several variations in the lower-division requirements in the state colleges. Students should consult the catalog of the individual state college for specific requirements in the major departments. In some state colleges, for example, competency in a foreign language is required to meet degree requirements in specific major programs (e.g., San Jose and Fresno state colleges). The aim of the General Education program is to encourage all students, regardless of the special roles they will fill in society, to develop the sense of values, attitudes, knowledge and skills needed for effective living. It is recommended that the requirements be completed during the first two years, but certain portions may be postponed until the junior year.

GENERAL EDUCATION PATTERN

College of San Mateo will certify the completion of the California state college General Education educational requirement if a student completes the program listed below. Such certification is made directly to the state college to which the student transfers, and meets the state college General Education requirement for the A.B. degree. Some State Colleges may require additional General Education courses for the A.B. Degree after transfer. For specific courses within each area, please refer to list below.

General Education Transfer Requirements—40 Semester Units

Area 1—Natural Science (minimum 6 units)

Must include at least one from a. and one from b., below.

- a. **Life Science**—Biology 1, 2, 3, 4, 5, 7, 11, 15, 16, 18a, 19, 20, 21, 22, 23, 24, 25, 30, 31, 33, 35, 37, 38 and 40; Paleontology 1.

40/Program Planning (Continued)

- b. **Physical Science**—Astronomy 10, 1a, 1b; Chemistry 10, 30a, 30b, 1a; Geography 1a; Geology 10, 1a, 1b; Meteorology 10, 1; Mineralogy 6; Physical Science 10; Physics 10, 2a, 2b, 4a.

Area 2—Social Sciences (minimum 11 units)

Must meet U.S. Government, and State and Local Government requirements, plus 6 additional units.

Anthropology 2, 3, 4; Economics 1a, 1b, 7, 10, 11, 12; Ethnic Studies 2, 3, 4, 6, 8, 16; Geography 1b, 4, 5a, 5b; Social Science 33, 48; Sociology 1, 2, 3, 4, 6, 12; History—all courses except History 99; Political Science—all courses numbered under 49; Psychology—all courses numbered under 49 except 7 and 14.

Area 3—Humanities (minimum 6 units)

At least 3 units in Literature or Philosophy, plus 3 additional units. Architecture 10; Art 1a, 1b, 1c, 2a, 10, 19, 40; Drama 1a, 1b, 2a, 2b, 10; English 12a, 12b, 12c, 12d, 13, 14, 20, 21, 22, 23, 24, 25, 26, 27, 30, 31a, 31b, 42a, 42b, 43, 46a, 46b, 48; Ethnic Studies 1, 11; Foreign Language 39, 40, 41, 42; French 4, 25a, 25b, 30; German 4, 25a, 25b, 30; Music 3, 6, 7, 9; Philosophy—all courses numbered under 49 except 7, 8, 12; Spanish 4, 4n, 25a, 25b, 29, 30; Speech 2a, 2b; Telecommunications 51.

Area 4—Basic Subjects

Aeronautics 10; Art 8, 68a, 68b; Business 10, 35, 58, 70a, 81, 83a, Business Administration 1a, 18a; Data Processing 60; Drafting 14; Economics 2; Education 1; Electronics 10; Engineering 4; *English 2, 9a, 9b, 10 or 11, 12a, 12b, 12c, 12d; French, German, Spanish 1, 2, 3, 8; Spanish 1a, 1b, 3n; Health Science 1, 2; Home Economics 1a, 1b, 9, 20a, 20b, 22, 24, 26, 40, 45; Journalism 1, 2, 3, 15, 16; Mathematics 10, 13, 16, 17, 19 through 34; Music 8; Philosophy 7, 8, 12; Physical Education; Psychology 7; Speech 1a, 4, 5, 27, 33.

*Required—6 units of English or English and Speech.

University of California (Berkeley Campus)

COLLEGE OF LETTERS AND SCIENCE REQUIREMENTS

In order to transfer to the University in the College of Letters and Sciences in junior standing, a student should com-

plete two years of not more than 70 units of credit in approved courses which will be acceptable by the university toward completion of four years of undergraduate work.

The student is urged to consult with his counselor at the junior college in regard to his plans and to refer to the following publications which may be secured directly from the University of California, Berkeley:

1. Bulletin. General Catalog, University of California, Berkeley.

2. Statewide Bulletin. Prerequisites and Recommended Subjects.

Below is a summary of requirements for the A.B. degree with sample lower-division courses offered at CSM which will satisfy these requirements.

Note: All requirements listed need not be completed in the lower division (first two years), and College of San Mateo courses shown are for illustration only and not a complete list.

University	College of San Mateo
<i>American History and American Institutions</i>	<i>Political Science 21 Political Science 23 History 17a, 17b English 10 or 11, 12</i>
<i>Reading and Composition (5 units)</i>	<i>French, German, Spanish 1, 2, 3 Mathematics 27</i>
<i>Foreign Language (12 units)</i>	
<i>Mathematics</i> (Satisfactory performance on an examination to test ability to use arithmetic, elementary algebra and elementary plane geometry or completion of college-level mathematics course.)	
<i>Natural Science (12 units)</i> (Including courses in both physical science and biological science.)	Chemistry 1a, 1b, 8; Physics 2a, 4a, 10; Biology 2, 3, 4, 5, 7, 11, 20, 21, 22, 23, 24, 25, 30, and 38; Paleontology; Geology 1a, 1b, 10; Astronomy 10.
<i>Social Science (12 units)</i>	Anthropology 2; Economics 1a, 1b; Geography 1b; History 4a, 4b; History 17a, 17b; Psychology 1a, 33; Political Science 1, 2; Sociology 1.
<i>Humanities (12 units)</i>	Art 1a, 1b, Art 2a, 2b; English Literature; French 4; Spanish 4; German 4; Philosophy 6a, 6b; Speech 2a.
<i>Major requirement</i> (Completed in the upper division)	

Stanford University

JUNIOR STANDING REQUIREMENTS

Selection is made on a competitive basis from those who meet minimum requirements and who have a significant reason for transferring to Stanford. All student candidates must satisfy general requirements for admission to the university itself, as well as special requirements for admission to the Schools of Medicine, Law, Nursing or the Hopkins Marine Station.

Academic Requirements for Junior Standing:

1. Completion of .87 quarter units (58 semester units). Normally a 2.75 grade point average is required for consideration.
2. A satisfactory score on the Scholastic Aptitude Test of the College Entrance Examination Board.
3. Recommendations as to character and personal qualifications.

The student is urged to consult with his counselor at the College in regard to his plans and to refer to the Stanford University Bulletin which may be secured directly from Stanford University.

Transfer Majors

A student who intends to transfer and major in one of the following fields should plan his course at College of San Mateo to meet the general requirements for junior standing, as well as the lower division departmental requirements, of the college or university to which he plans to transfer. This list contains the more popular majors only and is not intended to be all inclusive.

- Accounting
- * Aeronautics
- * Agriculture (Vocational)
- Anatomy
- Anthropology
- Archaeology
- Architecture
- * Art
- Astronomy
- Bacteriology
- Biochemistry
- Biology
- Biophysics
- Botany
- * Business
- Chemistry
- Criminology
- * Data Processing
- Dental Hygiene
- Denistry (Pre-Dental)
- Dietetics
- * Drafting Technology
- Drama
- Ecology
- Economics
- * Education
- * Electronics Technology
- Engineering

- English
- Entomology
- Ethnic Studies
- Foreign Language
- Forestry
- Genetics
- Geography
- Geology
- Geophysics
- Health Science
- History
- Home Economics
- * Horticulture
- Humanities
- Industrial Arts
- Interior Design
- International Relations
- Journalism
- Law (Pre-Legal)
- Liberal Arts
- * Library Technology
- * Machine Tools Technology
- Mathematics
- * Manufacturing Technology
- Medical Sciences
- Meteorology
- Microbiology
- Music
- * Nursing
- Nutrition
- Optometry (Pre-Optometry)
- Paleontology
- Pharmacy
- Philosophy
- Photography
- Physical Education
- Physical Therapy
- Physics
- Physiology
- * Police Science
- Psychology
- Public Health
- Recreation Health
- Social Science
- Sociology
- * Technical Illustration Technology
- * Telecommunications
- Theatre Arts
- Veterinary Medicine (Pre-Veterinary)
- * Welding Technology

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Wildlife Conservation
(Management)
Zoology

*Indicates that special curricula are also available. Refer to programs described under "Suggested Curricula".

Career Programs

College of San Mateo offers career programs that are designed for students who wish to prepare for gainful employ-

ment. Specialized courses in occupational curriculums are offered day and evening. Advisory Committees are involved in developing and updating each of these programs. The Associate in Arts degree may be earned by a student majoring in one of the transfer areas listed above, provided he meets the requirements for graduation from College of San Mateo. Courses are described under "College Courses" in this catalog; the current schedule of classes gives information regarding time and location of courses offered.

Suggested Curricula

Aeronautics

Transfer programs are available for four-year degree curricula at San Jose and San Francisco State Colleges and other institutions which provide Aeronautics or Design & Industry majors.

Aeronautics (Airframe Technology)

Associate in Arts Degree with a Major in Airframe Technology

Recommended High School Preparation: Elementary Algebra, Intermediate Algebra, Plane Geometry, Drafting, General Shop, and Physics or Physical Sciences.

Freshman Year	Units	
	F	S
Aeronautics 5	3	-
Aeronautics 6	3	-
Aeronautics 50	5	-
Aeronautics 50L	3	-
Aeronautics 51	3	-
Aeronautics 60	-	3
Aeronautics 60L	-	3
Aeronautics 80	-	2
Aeronautics 80L	-	2
English	-	3
Humanities	-	3
Physical Education	½	½
Total	17½	16½

Sophomore Year	Units	
	F	S
Aeronautics 81	3	-
Aeronautics 81L	3	-
Aeronautics 82	2	-
Aeronautics 82L	2	-
American Institutions	3	-
English	3	-
Aeronautics 83	-	3
Aeronautics 83L	-	3
Aeronautics 84	-	2
Aeronautics 84L	-	2
Health Science	-	2
State & Local Government	-	2
Physical Education	½	½
Total	16½	14½

Aeronautics (Powerplant Technology)

Associate in Arts Degree with a Major in Powerplant Technology

Recommended High School Preparation: Elementary Algebra, Intermediate Algebra, Plane Geometry, Drafting, General Shop, Physics or Physical Sciences.

Freshman Year	Units	
	F	S
Aeronautics 5	3	-
Aeronautics 6	3	-
Aeronautics 50	5	-
Aeronautics 50L	3	-
Aeronautics 51	3	-
Aeronautics 70	-	3
Aeronautics 70L	-	3
Aeronautics 71	-	2
Aeronautics 71L	-	2
English	-	3
Humanities	-	3
Physical Education	½	½
Total	17½	16½

Sophomore Year	Units	
	F	S
Aeronautics 60	3	-
Aeronautics 60L	3	-
Aeronautics 72	2	-
Aeronautics 72L	2	-
Aeronautics 72L	2	-
American Institutions	3	-
English	3	-
Aeronautics 73	-	2
Aeronautics 73L	-	2
Aeronautics 74	-	3
Aeronautics 74L	-	3
Health Science	-	2
State and Local Government	-	2
Humanities	-	3
Physical Education	½	½
Total	16½	17½

Career Opportunities

Well-qualified airframe technicians and powerplant technicians are in demand by airlines as well as other aircraft operations. The student who completes courses and obtains his Federal Aviation Certificate and Associate in Arts Degree in either or both fields of airframe or powerplant mechanics has excellent opportunities for steady employment.

Aeronautics (Commercial Pilot—Terminal Program)

Associate in Arts Degree with a Major in Aeronautics

Recommended High School Preparation: Intermediate Algebra, Plane Geometry, Drafting, Trigonometry, General Shop, and Physics or Physical Sciences or Business Administration.

Freshman Year	Units	
	F	S
Aeronautics 2a	3	-
Aeronautics 3	1/2	-
Aeronautics 6	3	-
Aeronautics 11	2	-
English	3	-
Math 51 or Business 10	3	-
Physics	3	-
Aeronautics 2b	-	3
Aeronautics 5	-	3
Aeronautics 12	-	2
Meteorology	-	3
Speech 1a	-	3
State and Local Government	-	2
Aeronautics 3	-	1/2
Physical Education	1/2	1/2
Total	18	17

Sophomore Year	Units	
	F	S
Aeronautics 8	3	-
Aeronautics 3	1/2	-
Aeronautics 7	2	-
Aeronautics 14	2	-
Humanities	3	-
American Institutions	3	-
Aeronautics 3	-	1/2
Aeronautics 15	-	1
Aeronautics 25	-	3
Psychology 1a	-	3
Business 66	-	4
Health Science	-	2
Physical Education	1/2	1/2
Total	14	14

Summer School: Aeronautics 13 (Option: Aeronautics 16, 17).

Designed for the student who plans to become a commercial pilot, flight instructor, airline pilot of fixed-base operator and does not plan to transfer to a four-year college. This course may also be used as basic training for aviation business and entrance into air traffic control employment. The flight portion of the program is handled by a fixed-base operator, and the student is responsible for payment of all flight costs.

Aeronautics (Commercial Pilot—Transfer Program)

Associate in Arts Degree with a Major in Aeronautics

Recommended High School Preparation: Intermediate Algebra, Plane Geometry, Drafting, Trigonometry, Business Administration, General Shop, Physics or Physical Sciences.

Freshman Year	Units	
	F	S
Aeronautics 2a	3	-
Aeronautics 3	1/2	-
Aeronautics 6	3	-
Aeronautics 11	2	-
English 10	3	-
Math. 21 or Business Administration	3-4	-
Aeronautics 2b	-	3
Aeronautics 3	-	1/2
Aeronautics 5	-	3
Aeronautics 12	-	2
State and Local Government	-	2
Business Administration	-	4
Speech 1a	-	3
Physical Education	1/2	1/2
Total	15	18

Sophomore Year	Units	
	F	S
Aeronautics 8	3	-
Aeronautics 3	1/2	-
Aeronautics 7	2	-
Aeronautics 14	2	-
Physics 2a	4	-
American Institutions	3	-
Aeronautics 3	-	1/2
Aeronautics 15	-	1
Economics 1a	-	3
Humanities	-	3
Physics 2b	-	4
Health Science	-	2
Meteorology 10	-	3
Physical Education	1/2	1/2
Total	15	17

Summer Session: Aeronautics 13

Designed for the student who plans to become a commercial pilot, flight instructor, airline pilot or fixed-base operator and plans to complete a four-year transfer program. The flight portion of the program is handled by a fixed-base operator and the student is responsible for payment of all flight costs.

For transfer to San Jose State College Aircraft Operations, Business Administration 1a and 1b should be taken in lieu of Math 21. It is recommended that students who have not had business in high school or who are below the 37th percentile in math scores enroll in either Business 10 or Business 66 prior to Business Administration 1a.

See catalog under Aeronautics 11 for enrollment in actual flight training courses.

This course may also be used as basic training for entering into aviation business administration and air traffic control employment.

Agriculture (Transfer Program)

Recommended High School Preparation: Chemistry, Physics, Elementary Algebra, Intermediate Algebra, Geometry, Trigonometry, Mechanical Drawing, two years in one foreign language.

The program outlined below is typical of requirements for transfer in junior standing to a four-year college or university.

The student should refer to the catalog of the college of his choice for special requirements.

Freshman Year	Units
English 10 or 11, and English 12 or Speech 1a	6
Biology 20, Cell Biology	4
Biology 21, Zoology	5
Biology 22, Botany	5
Physics 2a-2b, General	8
American Institutions	3
Total	31
Sophomore Year	Units
Chemistry 1a-1b, General	10
Chemistry 8, Elem. Organic	3
Social Science	7
Health Science	2
Physical Education	2
Electives	4
State and Local Government	2
Total	30

Electives will be used to complete the particular requirements of the transfer school. For example: U.C. Forestry requires Math 30, Engin. 1a-1b, Econ. 2 (Statistics); Humboldt State College Wildlife Management requires Zoology 1b, Psychology 1a, etc.

Included in the possible fields of emphasis are the following:

- Agricultural Economics
- Agricultural Education
- Agricultural Production
- Irrigation Science
- Agronomy (Plant Science)
- Genetics (Plant Science)
- Landscape Management
(Plant Science)
- Plant Pathology (Plant Science)
- Pomology (Plant Science)
- Vegetable Crops (Plant Science)
- Viticulture (Plant Science)
- Animal Science:
 - Animal Husbandry
 - Animal Physiology and Genetics
 - Poultry Husbandry
- Entomology and Parasitology
- Farm Management
- Food Science:
 - Dairy Industry Program
 - Food Technology Program
- Home Economics
- Pre-Forestry
- Pre-Veterinary Medicine
- Range Management
- Soil Science:
 - General Soil Science Program
- Soil Management and Conservation Program

Apprenticeship (Trade Related)

Evening classes are offered for the upgrading of journeymen in the trades, as well as related training classes for apprentices.

Archeology

See "Anthropology."

Architecture

Associate in Arts Degree with a Major in Architecture

Recommended High School Preparation: Academic program including Mathematics (4 years), Art (1 year), Mechanical Drawing (1 semester).

46/Suggested Curricula (Continued)

Freshman Year	Units	
	F	S
Architecture 10	3	-
Architecture 11, 12	1	1
Architecture 15a	-	2
Architecture 16	-	3
Architecture 21, 22	4	4
English	3	3
Health Science	2	-
Math.—by Eligibility	3	3
Physical Education	½	½
Total	16½	16½

Sophomore Year	Units	
	F	S
Architecture 17	3	-
Architecture 23, 24	4	4
Engin. 1a or Engin. 90a	3	-
Physics 2a-2b	4	4
Speech	3	-
American Institutions	-	3
State and Local Government	-	2
Gen. Ed. Elective	-	3
Physical Education	½	½
Total	17½	16½

Architecture (Architectural Engineering, Landscape, City and Regional Planning)

A student who plans to transfer to a university or college offering a professional program in Architecture should consult the catalog of the advanced institution of his choice, and then arrange a schedule of suitable transfer courses.

Art

The student who intends to transfer a major in Art should plan his course at College of San Mateo to meet the general requirements for junior standing, as well as the lower division departmental requirements of the college, university or art school to which he wishes to transfer. Students can plan their course in any of the following areas: Fine Arts, Commercial Art, Home Furnishings and Interior Design, and Photography.

An Associate in Arts degree is awarded with a major in Art in any of the following suggested program plans:

Art (Commercial)

Associate in Arts Degree with a Major in Commercial Art

Recommended High School Preparation: Design, Drawing, Painting and Poster Service.

Freshman Year	Units	
	F	S
Art 1a-1b	3	3
Art 2a-2b	3	3
Art 3a-3b	3	3
Art 4	-	2
Art 12a	2	-
English	3	3
Health Science	-	2
State and Local Government	2	-
Physical Education	½	½
Total	17½	16½

Sophomore Year	Units	
	F	S
Art 5a-5b	3	3
Art 6a	3	-
Art 12c	1	-
Art 15	-	2
Art 10a	3	-
Art 52	2	-
Art 53	-	2
Art 54	-	2
American Institutions	3	-
Gen. Ed. Electives	-	6
Physical Education	½	½
Total	15½	15½

Suggested Electives: Art courses not listed above; Business 120; Guidance 10; Speech 1a.

Career Opportunities

Commercial artists may be employed in advertising, manufacturing, public relations or communications. Experienced artists frequently specialize in a particular product or field such as fashion, industrial art, advertising, story illustration or interior design.

Art (Fine Arts)

Associate in Arts Degree with a Major in Fine Arts

Freshman Year	Units	
	F	S
Art 1a-1b	3	3
Art 2a-2b	3	3
Art 3a-3b	3	3
Art 4	-	2
Art 19	3	-
English	3	3
State and Local Government	-	2
Physical Education	½	½
Total	15½	16½

Sophomore Year

	Units	
	F	S
Art 3a-3b	3	3
Art 1a-1b	3	3
Art 68a-68b	3	3
Bus. 110	3	-
Bus. 116	3	-
Gen. Ed. Electives	-	3
American Institutions	3	-
Physical Education	½	½
Total	15½	15½

Suggested Electives: Art 2b, 4, 25, 72a-72b.

Art (Photography)

Associate in Arts Degree with a Major in Photography

Sophomore Year	Units	
	F	S
Art 5a-5b	3	3
Art 6a-6b	3	3
Art 7a	-	3
Art 15	-	2
Art 17a-17b	2	2
Health Science	2	-
American Institutions	3	-
Science Requirement	-	3
Speech Elective	3	-
Physical Education	½	½
Total	16½	16½

Freshman Year

	Units	
	F	S
English	3	3
Art 2a	3	-
Art 3a	-	3
Art 5a	-	3
Art 40	3	-
Art 41a-b	3	3
Art 43a	-	3
Physical or Life Science	3	-
Physical Education	½	½
Total	15½	15½

Art (Home Furnishings and Interior Design)

Associate in Arts Degree with a Major in Home Furnishings and Interior Design

Freshman Year	Units	
	F	S
Art 5a-5b	3	3
Art 12a	-	2
Art 14	-	3
Art 19	3	-
English	3	-
Health Science	2	-
Bus. 58 or Psych. 1a	3	-
Bus. 50 or Bus. 51	2	-
Bus. 10	-	3
Speech 62	-	3
State and Local Government	-	2
Physical Education	½	½
Total	16½	16½

Sophomore Year

	Units	
	F	S
Art 5b	3	-
Art 41c	-	3
Gen. Ed. Electives	3	3
Art 43b	3	-
Art 49	-	2
American Institutions	3	-
State and Local Government	-	2
Health Science	-	2
Electives	3	4
Physical Education	½	½
Total	15½	16½

Suggested Electives: Art 2b, 3b, 5b.

Business Administration

Transfer Program

Recommended High School Preparation: Elementary Algebra, Intermediate Algebra, Plane Geometry, Trigonometry, Chemistry or Physics, Foreign Language.

The program outlined below is typical of requirements for transfer in junior standing to a four-year college or university.

For information concerning the transfer requirements of other colleges and universities, students should consult the catalogs of the colleges and universities concerned, or their College of San Mateo counselor.

English 10 or 11, English 12 or Speech 1a*	6
Physical and Life Science	6-9
Economics 1a and 1b	6
Bus. Adm. 1a and 1b†	8
Bus. Adm. 18a	3
Physical Education	2
Gen. Ed. Electives	6
Economics 2	3
Literature, Philosophy and Arts (At least one in Philosophy or Literature)	9
Psychology 1a	3
Health Science	2
Social Sciences (Including American History, U.S. Constitution and California Government)	6-9

Students graduating with a major in the field of Business must achieve a percentile rating of 35 or over on the quantitative part of the SCAT entrance examination, or completion of Bus. 50 with a grade of C or better. It is recommended that Bus. 50 be completed by the end of the second semester.

*Speech 1a is required at San Jose State College and may be substituted for English 12. Logic or Ethics and Finite Math are required by San Jose State.

†It is recommended that Accounting majors take Bus. Adm. 1a-1b in their sophomore year.

Business (Non-Transfer Programs)

The following major programs are designed to qualify a student, upon completion of a curriculum, for employment in an area of specialization. The development of business skills which can be utilized for immediate employment is emphasized, with general courses offered to provide a background for future promotion in the chosen occupational area.

Students graduating with a major in the field of Business must meet the following subject requirements:

Mathematics—A percentile rating of 35 or over on the quantitative part of the SCAT entrance examination, or completion of Bus. 50 with a grade of C or better. It is recommended that Bus. 50 be completed by the end of the second semester.

Business 10—Introduction to Business, or **Management 99**—Introduction to Business Management offered in the evening.

Business Administration (Two-Year Program)

Associate in Arts Degree with a Major in Business Administration

This curriculum is for the Business student who does not wish to specialize.

Freshman Year	Units	
	F	S
Business 58	-	3
Health Science	-	2
Business 92	3	-
English	3-6	-
Business 65 or Business Admin. 1a	4	-
Business 50 or 51	3	-
Business Admin. 18a	-	3
Business 10	3	-
Business 65	-	3
Data Processing 60	-	3
Physical Education	½	½
Total	16½	14½

Sophomore Year	Units	
	F	S
Business 56	3	-
American Institutions	-	3
State and Local Government	2	-
Business 93	-	3
General Education Electives	3	3
Economics 1a-1b	3	3
Business 82a	3	-
Business Electives	3	3
Physical Education	½	½
Total	17½	15½

Suggested Electives: Business 18b, 69, 70a, 81, 82a, 83a, 110, 116, 118; Guidance 10.

Business (General Clerical)

Associate in Arts Degree with a General Clerical Major

Freshman Year	Units	
	F	S
Health Science	2	-
Business 92a, 92b, or 92c	3	3
English and Business 91	3	3
General Education Electives	3	-
Business 50 or 51	-	3
Business 56	-	3
Business 58	-	3
Business 10	3	-
Physical Education	½	½
Total	14½	15½

Sophomore Year

	Units	
	F	S
Data Processing 60	-	3
Business 93	3	-
History 17a-17b	3	3
Business 100a	3	-
State and Local Government	-	2
General Education Electives	3	3
Business Electives	-	3
Business 66 or Business Admin. 1a	4	-
Business 108a	-	3
Physical Education	½	½
Total	16½	17½

Suggested Electives: Business 35, 83a, 97; Business Administration 18a; Guidance 10; Speech 62.

Clerk-Typist Certificate Program

Remedial Courses (if required by testing)

Core Courses	Units
Bus. 92a-b-c—Typing (through 92c)	3-9
Bus. 100a—Office Procedures	3
Bus. 10—Introduction to Business	3
Related Courses	9
Bus. 108a—Internship	3
College English	3
Electives	3
Total	27-33

Business (Data Processing)

Associate in Arts Degree with a Major in Data Processing

Freshman Year

	Units	
	F	S
Data Processing 60	3	-
Data Processing 61 or Data Processing Elective	-	4
Data Processing 62	-	4
Mathematics Elective	3	-
Economics 1a-1b* or Business 10 and Business Elective	3	3
English	3	3
Data Processing 97† or General Education Elective	3	-
Physical Education	½	½
Total	15½	14½

*Or Economics 7 and elective.

†Optional for men; strongly recommended for women.

Sophomore Year

	Units	
	F	S
Data Processing 63	3	-
Data Processing 64a	3	-
Data Processing 64b	-	3
American Institutions	-	3
Business Administration 1a-1b or Business 66 and Business Elective	4	4
Health Science	-	2
General Education Electives	4	3
Physical Education	½	½
Total	14½	15½

Suggested Electives: Biology 1 or 2; Business 105; Chemistry 30a; Data Processing 65a, 65b, 66, 106; English Literature; Mathematics 25; Philosophy 6a and 6b, Philosophy 7 and 12.

Business (Management) Certificate Program

The Certificate in Management is awarded by College of San Mateo upon completion of four required courses and four elective courses in the Management Program. Each of these courses carries three units of lower division college credit. The 24 units earned in the certificate program will fulfill the major requirement for an Associate in Arts degree.

50/Suggested Curricula (Continued)

The courses are all general in nature and practical in application; the program is designed for persons working at the supervisory level or for those interested in supervisory positions. An advisory committee composed of representatives from various types of business and industrial organizations has assisted the College staff in the development of the program.

Under some circumstances, parallel courses completed at other institutions may be applied toward the certificate upon submission of transcripts or official verification of records.

For information concerning specific courses included in this program, refer to the Management Brochure and the Catalog listing.

Business (Medical Assisting)

Associate in Arts Degree with a Major in Medical Assisting

Freshman Year	Units	
	F	S
Business 92b or 92c	3	-
Business 10	3	-
English	3	3
Business 50 or 51	3	-
Business 66	4	-
Anatomy 51	-	2
Business 57	-	3
Business 59	-	3
State and Local Government	-	2
Business 100a	-	3
Physical Education	½	½
Total	16½	16½

Sophomore Year	Units	
	F	S
American Institutions	3	-
Business 58	3	-
Nursing 60	-	3
Business 108s	-	3
Business 100m	-	3
Speech 62	3	-
Health Science	2	-
Economics 1a	-	3
General Education Electives	3	3
Physical Education	½	½
Total	14½	15½

Students whose score on the Mathematics Section of the Scat Test is below the 35th percentile are required to take Business 50.

Business (Merchandising)

Certificate Program

It is recommended that the student complete the requirements for the Associate in Arts degree in addition to the Certificate Program.

Required Courses

First Semester	Units
Business 50 (if required by test)	3
Business 10	3
Business 58	3

Second Semester

Business 110	3
Business 116	3
One course in Merchandising in area of concentration	3

Third Semester

Speech 62	3
Business 109a	3
One course in Merchandising in area of concentration	3

Fourth Semester

Business 118	3
Business 109b	3
One course in Merchandising in area of concentration	3

Areas of Concentration (one area required)

Merchandising Management (9 units): Business 65 and two courses from the following: Business 66 or Business Administration 1a, Business 120, Business 124. Recommended elective, Business 92a.

Merchandising—Home Furnishings (9 units): Art 3a, Art 68a-b. Recommended electives, Architecture 14 and Business 92a.

Merchandising—General (9 units): Three courses in Business and Art selected from areas of concentration or any other Business course.

Associate in Arts Degree Program

By completing the Certificate Program and the additional courses listed below, the student is eligible for both the Certificate in Merchandising and the Associate in Arts degree.

American History and Institutions, and State and Local Government.

English: 10 or 11, 60 or 61. Speech 62 recommended for second course.

Health and Physical Education.

General Education elective in Science or Math.

General Education elective in Humanities; Art 19 recommended.

Free electives to complete a total of 60 units.

Business (Real Estate)

Plan I—Associate in Arts Degree with a Major in Real Estate

Freshman Year	Units	
	F	S
Business 50 or Business 51	3	-
Business 83a	3	-
Business 84	3	-
English	3	3
Business 82a	-	3
Business 10	-	3
Business 83b	-	4
Business Administration 18a	-	3
Business 66 or Business Administration 1a	4	-
Physical Education	½	½
Total	16½	16½

Sophomore Year	Units	
	F	S
Business 87	3	-
Business 81	-	3
State and Local Government	2	-
American Institutions	-	3
Economics 1a	3	-
General Education Electives	3	3
Business 110 or 111	3	-
Business 88	-	3
Health Science	2	-
Business 56 or Business 120	-	3
Physical Education	½	½
Total	16½	15½

See Business section for division requirements for all Business majors.

Suggested Electives: Architecture 10; Business 58, 69, 83c, 92a; Business Administration 18b; Economics 1b; Guidance 10; Psychology 1a; Speech 62.

Plan II—Professional Real Estate Certificate Program

(See Real Estate Brochure for program specifics.)

Basic Training Required:

Business 83a, 84

Professional Courses Required:

Prerequisite: A Real Estate Broker's or Salesman's License, or completion of Business 83a and 84 and consent of instructor.

Business 85 or 83b, 87, 88, 131 or 83a, 134.

Advanced Professional Elective Courses: (three of the following are required)

83b (83c may be taken concurrently but is not a substitute for Bus. 140), 135, 136, 138, 139, 140, 141, 142.

Special Professional Courses: (these may be used for Certificate credit also)

Business 145a, 145b, 145c.

Alternate Methods of Satisfying Real Estate Certificate Requirements:

1. Candidates may satisfy not more than 12 units of the required 24 with courses completed at other collegiate institutions which are of satisfactory quality and cover subjects comparable to those included in this program. This credit does not automatically apply to the Associate in Arts Degree.

2. Upon application, a student may meet subject requirements by courses satisfactorily completed through the American Institute of Real Estate Appraisers, the Institute of Real Estate Management, or courses taken in applied fields. This credit does not apply toward the Associate in Arts Degree.

Career Opportunities

Since the course prepares for the State Examinations, some students who take Plan 1 or Plan II become real estate salesmen or brokers. Other students find employment with banks or other institutions which make loans on real property, or they become investors or managers of income property. Many students will use this type of information in purchasing a home or income property.

Business (Secretarial)

Associate in Arts Degree with a Secretarial Major

Recommended High School Preparation: Typing, Shorthand (Gregg System), Business English, Business Arithmetic and Office Machines.

52/Suggested Curricula (Continued)

Freshman Year	Units	
	F	S
Health Science	-	2
Bus. 92a or 92b	3	-
English	3	3
Business 66	4	-
Bus. 50 or 51	3	-
Business 91	3	-
Business 10	-	3
Bus. 90a, b or c	-	5
General Education Electives	-	3
Physical Education	½	½
Total	16½	16½

Sophomore Year	Units	
	F	S
Business 56	3	-
Business 92b or 92c	3	-
Business 90b	7	5
Business 100a	3	-
American Institutions	-	3
State and Local Govt.	-	2
General Education Electives	-	3
Business 108a	-	3
Physical Education	½	½
Total	16½	16½

See Business section for division requirements for all Business majors.

Suggested Electives: Business Administration 18a; Business 35, 58, 69, 81, 82a, 83a, 93; Geography 10; Guidance 10.

Secretarial Certificate Program Requirements

Remedial Courses (if required by testing)	Units
Core Courses	
Bus. 92a-b-c—Typing (through 92c)	3-9
Bus. 90a-b-c—Shorthand (through 90c)	3-15
Bus. 100a—Office Procedures	3
Bus. 10—Introduction to Business	3
Bus. 108a—Internship	3
Related Courses	9
English (Business English recommended)	5-6
Speech	3
Total	32-51

Students wishing to major in one of the Specialized Secretarial Programs should plan their programs to include the regular Secretarial courses plus the following:

Medical—Bus. 57, 59, 90m, 100m
Legal—Bus. 100L, 90L

Business (Legal Secretarial)

Associate in Arts Degree with Legal Secretarial Major

Freshman Year	Units	
	F	S
Business 92b-92c	7	4
Business 90b-90c	3	3
English	3	3
Health Science	2	-
Business 100a	-	3
Business Admin. 18a	-	3
Physical Education	½	½
Total	15½	16½

Sophomore Year	Units	
	F	S
Business 100L	3	-
Business 90L	3	-
Business 108s	-	3
General Education Electives	3	3
Electives	3	6
State and Local Government	2	-
American Institutions	-	3
Business 10	3	-
Physical Education	½	½
Total	17½	15½

Suggested Electives: Business 58 and 66; Psychology 1a; Speech 1a or 62.

Business (Medical Secretarial)

Associate in Arts Degree with a Medical Secretarial Major

Freshman Year	Units	
	F	S
English	3	-
Business 10	3	-
Business 92b or Business 92c	3	-
Business 90b-90c	7	4
Business 57	-	3
Business 59	-	3
Business 100a	-	3
Anatomy 51	-	2
Physical Education	½	½
Total	16½	15½

Sophomore Year	Units	
	F	S
English	3	-
Business 90m	-	2
Business 100m	-	3
Health Science	-	2
Speech 62	3	-
General Education Electives	3	3
Business 58	3	-
Business 108s	-	3
Nursing 60	-	3
American Institutions	3	-
State and Local Government	2	-
Physical Education	½	½
Total	17½	16½

Business (Transportation)

Associate in Arts Degree with a Major in Transportation

Freshman Year	Units	
	F	S
English	3	3
Business 50 or 51	3	-
Business 10	-	3
Business 70a	-	3
Economics 1a-1b	3	3
Geography 5a	3	-
Geography 4	-	3
Health Science	2	-
Physical Education	½	½
Total	14½	15½

Sophomore Year	Units	
	F	S
Business 124	3	-
Business 70b	-	3
Business Administration 18a	3	-
Geography 1a	-	3
History 17a-17b	3	3
Business Administration 1a or Business 66	4	-
State and Local Government	-	2
Business 65	-	3
General Education Electives	3	3
Physical Education	½	½
Total	16½	17½

See Business section for division requirements for all Business majors.

Suggested Electives: Business Administration 18b; Economics 2, 11; Psychology 1a.

Career Opportunities

A relatively new field in business, Transportation offers an unlimited future in rail, motor, marine and air transportation, plus the field of traffic management. Numerous positions are offered in personnel, public relations, trade development, promotional services and management.

Community Services

The College of San Mateo Community Services schedules each semester approximately one hundred short courses, film series, public forums, lecture series, small group discussions, institutes, concerts and similar educational and cultural programs for the public at large. To obtain a brochure listing current Community Services events, telephone the Information Office, 574-6544.

Cooperative Education

Cooperative Education endeavors to give the student field experience which is related to his major. There are three basic programs. The Parallel Program operates concurrently with the daily studies. Through a program of work and study, the relationship between theory and practical application is established. The Alternate Semester Plan provides the student with full-time field experience for half a year. The second half of the year is spent in school. The New Careers Plan is for students who are working full time and taking evening classes related to their career goals.

Cosmetology (Beautician)

Requirements: Good physical condition and evidence of emotional stability. High school graduate or 18 years of age or 10th grade education substantiated by an approved test or by a transcript from high school attended. Intended employment in the field of cosmetology. A personal interview is held followed by application to enroll.

Recommended High School Preparation: Art, Chemistry, Typing and Business Courses, Foreign Language, General Science, Home Economics and Speech.

The Cosmetology classes operate for six hours per day in Plans I and II and for six to eight hours in Plan III. The student completes 1600 hours of Cosmetology training in one year and summer session or within two years, in preparation for the California State Board of Cosmetology Examination. The curriculum can lead to an Associate of Arts Degree if desired. Enrollees are accepted throughout the year as vacancies occur.

Note: High school students may enroll in cosmetology training at College of San Mateo in their senior year by contacting their respective schools and the Cosmetology Division. Program combines morning classes in high school and afternoon training in cosmetology at College of San Mateo. Summer sessions are included. During this time, students may complete one half of the total hours of cosmetology training required by the California State Board of Cosmetology. The balance of 1600 hours will be completed by registering as a full-time student of cosmetology at College of San Mateo upon graduation from high school.

Plan I—Associate in Arts Degree with a Major in Cosmetology

Freshman Year	Units	
	F	S
Cosmetology 50	10-14	10-14
English	3	3
Business 50	2	-
Art 80 or Art 63a	-	2
Physical Education	½	½
Total	15½	15½

Sophomore Year	Units	
	F	S
Cosmetology 51	10-14	10-14
American Institutions	3	-
State and Local Government	-	2
Gen. Ed. Electives	2	-
Health Science	2	-
Physical Education	½	½
Total	15½	15½

Plan II—Associate in Arts Degree with a Major in Cosmetology

Freshman Year	Units	
	F	S
English	3	3
History 17a-17b	3	3
State and Local Government	2	-
Health Science	2	-
Business 50	2	-
Art 80 or Art 63a	2	-
Gen. Ed. Elective	2	-
Cosmetology 50	-	10
Physical Education	½	½
Total	15½	15½

Sophomore Year	Units	
	F	S
Cosmetology 50, 51	14	14
Physical Education	½	½
Total	14½	14½

Suggested Electives: Business 58, 66; Psychology 1a; Sociology 1; Speech 62.

Plan III—Prepares for Employment at End of Freshman Year

	Units	
	F	S
Cosmetology 50	10-14	10-14
Cosmetology 51	10-14	10-14
Physical Education (if required)	½	½

Special Courses in Cosmetology

Cosmet. 52—Cosmetologist (Brush-up)	Units to be determined
1. Refresher course—upgrading persons who hold California Cosmetologist License.	
2. Refresher course for out-of-state Cosmetologist in preparation for California State Board of Cosmetology Examination.	
Cosmet. 53—Manicurist	Units to be determined
350 hours prepares a special manicurist to take the California State Board of Cosmetology Examination and subsequent employment in this field only.	
Cosmet. 90—Advanced Workshop (Offered in the evening.)	1 unit
Art 80 Line, Design, Form, Color	2 units

Dental Assisting

Plan I—Associate in Arts Degree with a Major in Dental Assisting

Freshman Year	Units	
	F	S
English	3	3
Health Science	-	2
American Institutions	3	-
State and Local Government	-	2
Business 50	3	-
Gen. Ed. Electives	6	8
Physical Education	½	½
Total	15½	15½

Sophomore Year	Units	
	F	S
Dental Assisting 50	15	-
Dental Assisting 60	-	15
Physical Education	½	½
Total	15½	15½

Plan II—Dental Assisting (One-Year Program)

First Semester	Units	
Dental Assisting 50	15	
Physical Education	½	
Total	15½	
Second Semester		
Dental Assisting 60	15	
Physical Education	½	
Total	15½	

This program prepares for employment at the end of one year. Proficiency in typing is recommended for both programs.

Drama

The program outlined below is typical of requirements to transfer in junior standing to a four-year college or university. The student should refer to the catalog of the college of his choice for special requirements. Terminal Drama students should refer to General Education course requirements under "Graduation Requirements."

	Units
English and/or Speech	6
Social Science	
American Institutions and/or U.S. History	5-8
Psychology 1a or Elective	3-5
Humanities—Music, Art, Literature, Philosophy	3
Foreign Language (continuing from high school)	5-10
Health Science	2
Physical Education	2
Major units (minimum)	20

Courses recommended for the Drama Major: Drama 1a-1b, 2a-2b, 10, 12, 14a, 26.

Drama Electives: Drama 13, 14b, 15, 16, 17, 49.

Suggested Electives: Architecture 14; Art 1a-1b, 2a-2b, 3a-3b, 4, 5a-5b, 7a, 13a-13b, 15, 52, 53, 63a-63b; English 25; Music 3; Physical Education (Dance, Fencing, Ballet, Aquacade Production); Speech 2a, 33.

Education (Transfer Program)

Recommended High School Preparation: History, English (four years), Foreign language (three years in one language—Spanish is strongly recommended for Elementary teachers in California), Algebra, Geometry, Chemistry or Physics.

Students who are planning for a career in teaching will concentrate on meeting the General Education requirements for the credential they are seeking as well as the General Education requirements of the college they plan to attend. These requirements may differ in some detail. However, by careful planning both of these General Education requirements can be met with the same program of courses. The program of courses recommended for a student who plans to teach will depend upon the credential sought and the teacher education college chosen. Candidates for the standard elementary teaching credential should complete Math. 16.

Education (Teacher Assistant)

Plan I—Associate in Arts Degree with a Major in Teacher Assisting

This program prepares the student to serve as a paraprofessional member of the teaching team. Teacher assistants work under the direction of a professional teacher in tutoring individuals or groups and performing a wide variety of other tasks in the classroom.

Required Courses for the Major	Units
Education 1, 2 and 3	9
Business 92a, b, or r (or proof of typing competency)	2
Speech 62, 1a or 33 (by advice of counselor)	3
Psychology 1a, or 53 or 51 (by advice of counselor)	3
Cooperative Education field experience	3
Total	21

Suggested Electives: Art 8; Business 100; Library Technology 55; Mathematics 16; Music 8; Physical Science; Life Science.

Plan II—Certificate Program for the Teacher Assistant

Total	24 units
Required Courses	20 units
(from the foregoing list of required courses)	
Suggested Electives	4 units
(from the foregoing list of suggested electives)	

Equivalent courses in Speech and Psychology, and a demonstrated competency in typing may be substituted for required courses.

56/Suggested Curricula (Continued)

Additional courses will then be selected from the suggested electives to make up the total.

Engineering

The basic Engineering program prepares for transfer to a four-year college or university in junior standing. The student should refer to the catalog of the college of his choice for special requirements; however, the following core subjects were approved unanimously by representatives of all the California State Colleges and all branches of the University of California at the fall meeting of the Engineering Liaison (ELC) Committee in November, 1970.

	Units
Mathematics (beginning with Analytical Geometry and Calculus and completing a course in Ordinary Differential Equations)	16
Chemistry (for engineers and scientists)	8
Physics (for engineers and scientists)	12
Statics	3
Graphics and Descriptive Geometry	3
Computers (digital)	2
Orientation and Motivation	1
Properties of Materials	3
Electrical Circuits and Devices	3
Electives	11-15
Total	62-66

Math 25—Computer Programming—is the only course not in the detailed program, but it can be taken as one of the unspecified electives to completely satisfy the ELC core program requirements.

Engineering (Basic Program)

Recommended High School Preparation: Mathematics (four years, including one semester of Analytic Geometry); Chemistry (one year); Physics (one year); Mechanical Drawing (one year).

Freshman Year	Units	
	F	S
Engineering 4	2	-
Engineering 20, 22	2	2
Mathematics 31, 32	4	4
Chemistry 1a-1b	5	5
Physics 4a	-	4
Health Science	-	2
Physical Education	½	½
Elective	3	-
Total	16½	17½

Sophomore Year

	Units	
	F	S
Engineering 35, 38	3	3
Engineering 45	3	-
Mathematics 33, 34	4	3
Physics 4b-4c	4	4
American Institutions	-	3
State and Local Government	-	2
English 10 or 11, English 12 or Speech 1a	3	3
Physical Education	½	½
Total	17½	18½

Suggested Electives: Engineering 1a; Mathematics 25; Geology 1a; a Life Science course.

Ethnic Studies

College of San Mateo offers a variety of courses for the student who wishes to major in Ethnic Studies, enabling him to transfer to a university or four-year college at the end of the sophomore year. The student should consult the catalog of the college of his choice for special requirements.

Fire Science Training (Certificate Program)

Fire Science Training is divided into two parts. Fifteen units of course work leads to the initial certificate. An advanced certificate is awarded upon completion of an additional 15 units. A minimum of 12 of the 15 units for the initial certificate, or 27 of the 30 units for the advanced certificate must be completed at this College. Three units in approved courses in related fields other than Fire Science Training may be counted toward the above certificates; e.g., Public Speaking, Report Writing, Public Relations, Business Law, First Aid, Political Science and Human Relations.

Home Economics (Transfer Program)

The student who intends to transfer a major in Home Economics should plan his course at College of San Mateo to meet the general requirements for junior standing, as well as the lower division departmental requirements, of the college or university to which he wishes to transfer.

Home Economics**Associate in Arts Degree with a Major in Home Economics**

Freshman Year	Units	
	F	S
Home Economics 1, 2	3	3
Home Economics 24	-	2
Gen. Ed. Elective	-	2
Home Economics 45	-	3
Art 68a	3	-
Psychology 1a	3	-
Psychology 4	-	3
English and/or Speech	3	3
State and Local Government	2	-
Health Science	2	-
Physical Education	½	½
Total	16½	16½

Sophomore Year	Units	
	F	S
Home Economics 20, 21	3	3
Home Economics 9	2	-
Home Economics 40	-	3
Anthropology 2	3	-
Art 72a	2	-
American Institutions	3	-
General Ed. Elective	2	3
Psychology 5	-	3
Physical Education	½	½
Elective	-	3
Total	15½	15½

Career Opportunities

Home Economics education will be useful to every young person who expects to manage a home as part of her life's career. In addition, it will assist in providing employment opportunities in fashion merchandising or test kitchens, or as an airline hostess, teacher assistant in nurseries or child care centers, diet clerk in hospitals or nursing homes, appliance demonstrator, or volunteer employee in world food, health and home programs.

Home Economics**Associate in Arts Degree with a Major in Fashion Merchandising.**

The Fashion Merchandising curriculum is a study of the ready-to-wear apparel industry with consideration of the various factors (economical, political and societal changes), which affect the merchandising of fashion apparel.

Freshman Year	Units	
	F	S
Home Economics 20 or 21	3	-
Home Economics 28	3	-
English and/or Speech	3	3
Art 3a, 5a	3	3
Business 50 or 51	3	-
Business 55	-	3
Home Economics 22, 24	3	2
Physical Education	½	½
Total	15½	14½

Sophomore Year	Units	
	F	S
Home Economics 26, 30	6-7	-
Home Economics 32	-	3
Business 109a	-	3
Business 110 or 120	3	-
Business 116 or 124	-	3
American Institutions	-	3
State and Local Government	2	-
Health Science	2	-
Physical Education	½	½
Gen. Ed. Electives	2	3
Total	15½	15½

Suggested Electives: Anthropology 2; Art 52, 53, 63a-63b; Business 58, 65, 92a; Home Economics 1, 2, 9, 40, 45.

Horticulture

Four programs in Horticulture are available to interested students. These programs, though similar, afford specific training geared to meet the individual requirement of the Horticulture student. Although these programs are designed to provide certification in Horticulture, it is possible to enroll in

58/Suggested Curricula (Continued)

individual classes without regard to the certificated program. No pre-requisites are required. Consult individual course listings under Horticulture.

Program I—Certificate in Vocational Gardening

Evening Program: Three years, including two years of full-time experience in gardening and satisfactory completion of the following courses:

	Units
Horticulture 130a-130b	1-1
Horticulture 132a-132b	1-1
Horticulture 135a-135b	1-1

Program II—Certificate in Environmental Horticulture (One-year Day Program)

	Units
Horticulture 110a-110b	3-3
Horticulture 111	3
Horticulture 112	3
Horticulture 113	3
Horticulture 114	3

Program III—Certificate in Ornamental Horticulture

Evening Program: Three years, including two years of full-time practical experience in a horticulture occupation, and satisfactory completion of 24 units as follows:

	Units
Horticulture 95a-95b	2-2
Horticulture 93	2
Horticulture 94	2
Horticulture 90a-90b, or 90c-90d, or 90e-90f	2-2

Electives: Horticulture 91a-91b, 96a-96b, 97a-97b, 98a-98b. (12 units required from this group of electives)

Program IV—Associate in Arts Degree with a Major in Ornamental Horticulture

Freshman Year	Units	
	F	S
Horticulture 110a-110b	3	3
Horticulture 111	3	-
Horticulture 113	-	3
English	3	3
Business 66	4	-
Business 110	-	3
Physical Education	½	½
Gen. Ed. Elective	-	3
Total	14½	16½

Sophomore Year

	Units	
	F	S
Horticulture 112	3	-
Horticulture 114	-	3
American Institutions	3	-
State and Local Government	-	2
Architecture 14	3	-
Electives*	6	6
Health Science	-	2
Physical Education	½	½
Gen. Ed. Elective	-	3
Total	15½	16½

Suggested Electives: Horticulture 93, 94, 98a-98b.

*A minimum of one additional course in Horticulture is required.

Liberal Arts (Transfer Program)

Recommended High School Preparation: English (three years), Elementary Algebra, Plane Geometry, Intermediate Algebra, Laboratory Science taken in junior or senior year, Foreign Language (two years in same language). (High school Foreign Language and a Laboratory Science are not required for transfer to some institutions.)

The program outlined below is typical of requirements for transfer in junior standing to a four-year college or university. The student should refer to the catalog of the college of his choice for special requirements.

	Units
English 10 or 11, English 12 or Speech 1a	6
Physical Science	3-8
Biological Science	3-8
Social Science	
American Institutions	5
Humanities	
Literature or Philosophy,	3-6
Music, Art, Drama, Literature, Philosophy	3
For Major Requirements in specific subject fields confer with a counselor	
Health Science	2
Physical Education	2
Foreign Language (Continuing from high school)	5-10

Library Technology

The Certificate in Library Technology is awarded by College of San Mateo upon completion of 24 semester units. For complete details, consult the Library Technology brochure available at the Library.

Life Sciences (Transfer Program—Biology Majors)

The program outlined below is typical of requirements to transfer in junior standing to a four-year college or university. It is anticipated that the student has satisfactorily completed high school courses in chemistry, math (through algebra) and biology. In order to meet the requirements of specific institutions, the student should refer to the catalog of the college of his choice.

Freshman Year	Units	
	F	S
Chemistry 1a-1b	5	5
Mathematics	3	-
English 10 or 11, English 12 or Speech 1a	3	3
Social Sciences	3	3
Physical Education	½	½
Biology 20	-	4
Total	14½	15½
Sophomore Year	Units	
	F	S
Chemistry 8, 9	6	-
Biology 22	5	-
Biology 21	-	5
Humanities	3	3
American Institutions	-	3
State and Local Government	2	-
Health Science	-	2
Physical Education	½	½
Total	16½	13½

Suggested Electives: Physics 2a-2b recommended.

Mathematics

College of San Mateo offers a wide variety of courses for the student who wishes to major in Mathematics, enabling him to transfer to a university or four-year college at the end of the sophomore year. The student should consult the catalog of the college of his choice for special requirements.

Recommended High School Preparation: Four years of high school level Mathematics, Physics (one year), Mechanical Drawing (one year), two or more years of a Foreign Language (German, French or Russian).

Medical Sciences (Transfer Program)

(Pre-Medical, Pre-Nursing, Medical Lab Technician, Physical Therapy, Dentistry, Dental Hygiene, Pre-Veterinary Medicine, Pre-Pharmacy, Optometry.)

Recommended High School Preparation: Elementary Algebra, Plane Geometry, Intermediate Algebra, Trigonometry, Chemistry, Biology, Physics, Foreign Language.

The program outlined below is typical of requirements for transfer in junior standing to a four-year college or university. The student should refer to the catalog of the college of his choice for special requirements.

	Units
English 10 or 11 and English 12 or Speech 1a	6
Social Science	
American Institutions	5-8
Psychology 1a or Elective	3-5
Humanities	
Literature, Philosophy	3
Art, Drama, Music, Literature, Philosophy	3
Foreign Language (continuing high school)	5-10
Health Science	2
Physical Education	2
Major Requirements	20-30

May include:

Chemistry 1a-1b, 5, 8, 9
 Physics 2a-2b, 3a-2b or
 Physics 4a-4b-4c;
 Biology 20, 21, 23, 24, 25;
 Psychology 33;
 Anthropology;
 Analytical Geometry and Calculus.

Military Science (Reserve Officers' Training Corps)

Military Science is offered to qualified students enrolled on a full-time basis at College of San Mateo. Classes and leadership laboratory are conducted at San Jose State College under the supervision of the Professor of Military Science, San Jose State College.

Students may complete the first two years of Army ROTC while enrolled at College of San Mateo and qualify for enrollment in the advanced course (third and fourth year) at degree granting colleges or universities. Completion of ROTC and a baccalaureate degree qualify students for a commission in the United States Army Reserve.

Students may obtain enrollment forms from their counselor or the Department of Military Science, San Jose State College.

Nursery School

The Nursery School program is designed to prepare qualified nursery school assistants who, upon completion of the curriculum, are capable of performing the duties of a teaching assistant in a variety of different preschool programs. Brochures are available through the Information office outlining transfer or certificate programs. Nursery school facilities are available in San Mateo or Millbrae.

Nursing (Transfer Program)

Also see "Medical Sciences."

The student who intends to transfer a major in Nursing should plan his course at College of San Mateo to meet the general requirements for junior standing, as well as the lower division departmental requirements, of the college or university to which he wishes to transfer.

Nursing

Associate in Arts Degree

The College of San Mateo Associate in Arts Nursing Program provides students with opportunities for learning at the College and in local hospitals and related health agencies. Clinical practice begins early in the first semester.

The graduate of this program is prepared to care for patients in homes and hospitals, clinics and doctors' offices.

Upon graduation, the candidate receives an Associate in Arts degree and is eligible to write the California State Board Examination for Registered Nurses.

Requirements: high school graduation with "C" grades in academic subjects. Additional work attempted following high school graduation and prior to admission to the nursing program must be of the same quality; successful performance on college entrance examinations; good physical and mental health. Preference given to U.S. citizens residing within the San Mateo Junior College District.

Required High School Preparation: College Preparatory curriculum. Elementary algebra, chemistry with laboratory experience, Biology with "C" grades. Above named science courses must have been completed within 5 years prior to entrance into nursing.

Freshman Year	Units	
	F	S
Nursing 1, 2	7	7
Biology 41	5	-
Psychology 1a	3	-
Biology 42	-	4
Psychology 5	-	3
State and Local Government	-	2
Physical Education	½	½
Total	15½	16½

Sophomore Year	Units	
	F	S
Nursing 3, 4	8	8
Sociology 1	3	-
English 10 or 11	3	-
Speech 1a	-	3
American Institutions	-	3
Elective*	-	2
Physical Education	½	½
Total	14½	16½

*Elective must be chosen from the fields of Music, Art, Philosophy, Drama.

Nursing (Vocational)

Total Program Hours: 450 lecture, 1,080 laboratory

This program is designed to prepare the student to meet the qualifications for licensing set up by the State Board of Vocational Nurse Examiners. The graduate of this program is prepared to care for patients in hospitals under the supervision of a registered nurse or licensed physician.

Requirements: four years of high school or equivalent; successful performance on college entrance examinations; good physical and mental health. Preference given to U.S. citizens residing within the San Mateo Junior College District.

First Semester (18 weeks)	Units		
	Lec.	Lab.	Total
Nursing 1	4	3	7
Vocational Nursing 51	5	2	7
Biology 53	2	-	2
Psychology 1a	3	-	3
Physical Education	-	½	½
Totals	14	5½	19½

Second Semester (18 weeks)	Lec.	Lab.	Total
Vocational Nursing 52a	7	8	15
Biology 52	2	-	2
Physical Education	-	½	½
Totals	9	8½	17½

Third Semester (10 weeks)	Lec.	Lab.	Total
Vocational Nursing 52b	2	7	9
Grand Totals	25	21	46

Ornamental Horticulture (Certificate Program)

The Certificate in Ornamental Horticulture is awarded by College of San Mateo upon completion of 12 required and 12 elective units in the Ornamental Horticulture Program and a minimum of two years' full-time practical experience in a horticultural occupation.

Physical Education (Transfer Program)

Recommended High School Preparation: Foreign Language, Elementary Algebra, Plane Geometry, Intermediate Algebra, Biology, Chemistry, competency in aquatics, rhythms and dance, games and relays, individual and dual sports, team sports, gymnastics and (for men) combatives.

Physical Education majors should take a variety of Physical Education activity classes which will be beneficial to future experiences.

The program outlined below is typical of requirements for transfer in junior standing to a four-year college or university. The student should refer to the catalog of the college of his choice for special requirements.

	Units
English 10 or 11, English 12 or Speech 1a	6
Social Science	
American Institutions	4-8
Humanities	
Psych. 1a and Electives	3-5
Literature, Philosophy	3-6
Art, Music, Drama, Literature, Philosophy	3
Foreign Language (Continuing from high school)	5-10
Health Education	2
Physical Education	2
Phys. Ed. 40--(Co-ed)	2
Phys. Ed. 41--(Men)	1
Phys. Ed. 20a, b, c, d--(Women)	2-8
Phys. Ed. 30a, b, c, d--(Men)	2-8
Major Requirements	20-30
May also include:	
Biology, Chemistry,	
Physics and Electives.	

Physical Sciences (Transfer Program--Chemistry, Physics)

Recommended High School Preparation: Elementary Algebra, Plane Geometry, Intermediate Algebra, Trigonometry, Chemistry, Physics, German.

The program outlined below is typical of requirements for transfer in junior standing to a four-year college or university. The student should refer to the catalog of the college of his choice for special requirements.

	Units
English 10 or 11, English 12 or Speech 1a	6
Social Sciences	
American Institutions	5-8
Psychology 1a or Electives	3-5
Humanities	
Literature, Philosophy	3-6
Art, Music, Drama	3
Health Education	2
German (Continued from high school)	5-10
Physical Education	2
Major Requirements	20-30
May include:	
Chemistry 1a-1b, 5, 12a;	
Math 25, 30, 31, 32, 33, 34;	
Physics 4a, 4b, 4c;	
Electives.	

Police Science

Associate in Arts Degree with a Major in Police Science

Freshman Year	Units	
	F	S
English	3	3
Police Science 9	3	-
Police Science 50	3	-
Police Science 52	-	3
Police Science 55	-	3
Police Science 60	3	-
Police Science 63	-	3
Health Education	2	-
Elective	2	-
American Institutions	-	3
Physical Education	½	½
Total	16½	15½

Sophomore Year	Units	
	F	S
Police Science 51a-b	3	3
Police Science 56	2	-
Police Science 59	3	-
Police Science 70	-	2
Police Science 71	2	-
Police Science 80	-	2
Electives	3	6
State and Local Government	2	-
Physical Education	½	½
Total	15½	13½

Suggested Electives: Art 41; Biology 1; Chemistry 30a; Philosophy 7; Physical Science 10; Physics 10; Psychology 1a; Sociology 1.

Police Science (Certificate Program)

This program is designed for members of the police force. Upon successful completion of the course in Principles of Police Science, the student will receive a Certificate of Completion and 12 units of college credit which may be applied to the Associate in Arts degree.

Social Science (Transfer Program)

Social Science fields are many and varied but include such areas as Cultural Anthropology, Economics, Geography, History, International Relations, Philosophy, Political Science, Psychology, Social Welfare and Sociology.

The student should refer to the catalog of the college of his choice for special requirements.

Technology (Transfer Programs)

Normally, graduates of College of San Mateo Technology Programs enter industry directly upon completion of their studies. Some graduates, however, may decide to further their collegiate education at that time or after gaining some industrial experience. Several of the state colleges offer programs to graduates of technology curriculums. The time required to complete the state college program is normally two years, at which time the graduate is awarded a Bachelor degree. The state college curriculum in which the graduates enroll is flexible; each graduate is considered individually, and courses are selected which will meet the needs and desires of the student.

Transfer curriculums which are open to College of San Mateo Technology graduates include the following:

San Francisco State College:	Design-Arts-Industry Program, Special Engineering Technology Curriculum
California Polytechnic College: (San Luis Obispo Campus)	Technical-Arts Curriculum
San Jose State College:	Industrial-Design Program, Industrial-Technology Curriculum
Fresno State College:	Industrial Technology Curriculum
Long Beach State College:	Industrial Technology Curriculum
Chico State College:	Industrial Technology Curriculum

Technology (Associate in Arts Degree Programs)

Technical Illustration

Associate in Arts Degree with a Major in Technical Illustration

	Units	
	F	S
Freshman Year		
Technical Illustration 52a-52b*	5	5
Technical Illustration 54*	3	-
Technical Illustration 55*	-	2
Technical Illustration 63*	2	-
Technical Illustration 64*	-	3
English	3	-
Health Science	2	-
State and Local Government	-	2
Gen. Ed. Elective	-	3
Physical Education	½	½
Total	15½	15½

	Units	
	F	S
Sophomore Year		
Art 1a-1b	3	3
Art 2a	3	-
Business 120	-	3
Technology 74	3	-
English	3	-
Art 12a	-	2
American Institutions	-	3
Gen. Ed. Electives	3	3
Physical Education	½	½
Total	15½	14½

*Required for a Major in Technical Illustration.

Those students who successfully complete the above curriculum will be eligible to receive the Certificate of Proficiency in Technical Illustration.

Career Opportunities

There are career opportunities for artists with technical illustration training in many areas, including research and development centers, technical publications, manufacturing plants, state and federal bureaus, educational institutions, and advertising agencies.

Technology (Drafting)

Associate in Arts Degree with a Major in Drafting Technology

Recommended High School Preparation: Elementary Algebra, Mechanical Drawing.

Freshman Year	Units	
	F	S
Drafting Technology 51a-51b	3	3
Drafting Technology 52a-52b	5	5
Technology 71	-	3
Technology 72	2	-
Technology 74	3	-
Technology 79	2	-
English	-	3
State and Local Government	-	2
Physical Education	½	½
Total	15½	16½

Sophomore Year	Units	
	F	S
Drafting Technology 62a-62b	5	5
Drafting Technology 63	3	-
Electronics Technology 10	3	-
English	-	3
American Institutions	-	3
Health Science	2	-
Gen. Ed. Elective	2	3
Physical Education	½	½
Total	15½	14½

Suggested Electives: Aeronautics 1, 4; Architecture 10; Art 2a, 12a, 41a; Economics 1a; Engineering 1a; Data Processing 60.

The students who successfully complete the above curriculum will be eligible to receive the Certificate of Proficiency in Drafting Technology.

Career Opportunities

Technical draftsmen are employed in manufacturing and construction industries in the area. They should, therefore, be technically trained in order to be adaptable to all types of industry. Many draftsmen advance to positions in the upper levels of industry.

Technology (Electronics)

Associate in Arts Degree with a Major in Electronics Technology

Freshman Year	Units	
	F	S
Electronics Technology 52, 52L	9	-
Manufacturing Technology 52	2	-
Electronics Technology 53, 53L	-	9
Manufacturing Technology 53	-	2
Health Science	2	-
English	-	3
Gen. Ed. Electives	3	3
Physical Education	½	½
Total	16½	17½

Sophomore Year	Units	
	F	S
Electronics Technology 62, 62L	9	-
Manufacturing Technology 62	2	-
English	3	-
State and Local Government	2	-
Electronics Technology 63, 63L	-	9
Electronics Technology 65	-	3
American Institutions	-	3
Physical Education	½	½
Total	16½	15½

Suggested Electives: Aeronautics 10; Astronomy 10; Business 58; Economics 1a; Life Science; Physical Science 10; Physics 10; Psychology 1a, 4, 33.

The student will be required to purchase a set of prescribed personal tools at the beginning of the first semester.

Those students who successfully complete the above curriculum will be eligible to receive the Certificate of Proficiency in Electronics Technology.

Career Opportunities

Electronics technicians are employed by several hundred electronics industries in the Bay Area, where the demand far exceeds the supply. Many technicians have advanced to positions as production engineers, heads of departments and other positions of prestige and responsibility. Typical fields are industrial control systems, computers and data processing equipment, electronic instruments, communications, microwave installations and testing of all types of electronic equipment.

Technology (Machine Tools)

Associate in Arts Degree with a Major in Machine Tools Technology

Recommended High School Preparation: Elementary Algebra, Plane Geometry, Mechanical Drawing.

Freshman Year	Units	
	F	S
Machine Tools Tech. 52, 52L	9	-
Machine Tools Tech. 53, 53L	-	9
Technology 72	-	2
Technology 74	-	3
Technology 75	2	-
Drafting Technology 14	2	-
Gen. Ed. Electives	-	2
English	3	-
Physical Education	½	½
Total	16½	16½

Sophomore Year	Units	
	F	S
Machine Tools Tech. 62, 62L	8	-
Machine Tools Tech. 63, 63L	-	8
American Institutions	-	3
State and Local Government	-	2
English	3	-
Health Science	2	-
Gen. Ed. Electives	3	3
Physical Education	½	½
Total	16½	16½

Students will be required to purchase a personal set of tools.

Those students who successfully complete the above curriculum will be eligible to receive the Certificate of Proficiency in Machine Tools Technology.

Career Opportunities

The machine tool technician is a vital figure in all manufacturing industry. He must work from blueprints, understand manufacturing processes and fabricate necessary parts through the use of lathes, mills, shapers, welding equipment, etc.

Technology (Manufacturing)

Plan I—Associate in Arts Degree with a Major in Manufacturing Technology

Freshman Year	Units	
	F	S
Manufacturing Technology 55, 56	4	2
Manufacturing Technology 54	-	2
Drafting Technology 14	3	-
Technology 71, 73	3	2
English	-	3
State and Local Government	-	2
Health Science	-	2
Gen. Ed. Electives	3	3
Elective	3	-
Physical Education	½	½
Total	16½	16½

Sophomore Year	Units	
	F	S
Manufacturing Technology 62	2	-
Manufacturing Technology 64	-	2
Manufacturing Technology 65	-	2
Manufacturing Technology 66	-	2
English	3	-
American Institutions	3	-
Electives	4	6
Gen. Ed. Electives	3	3
Physical Education	½	½
Total	15½	15½

Plan II—Certificate Only (23 units)

Manufacturing Technology 55, 56, 62, 64, 65, 66; Technology 71, 73; Drafting Technology 14.

All Manufacturing Technology courses are basically manual in nature; an extensive background of prerequisites is not required to master the skills in this program.

All Electronics majors are required to enroll in M.T. 52 during their first semester, along with other courses in the Electronics series. A student desiring to change from Electronics to Manufacturing Technology will be able to do so with relatively little loss of time.

Career Opportunities

Most courses in this program are offered to women as well as men. Electronic assembler, electro-mechanical inspector, silkscreen technician and light machine shop technician are all positions filled by women as well as men.

Technology (Welding)

Associate in Arts Degree with a Major in Welding Technology

Freshman Year	Units	
	F	S
Welding Technology 51a	3	-
Welding Technology 52a-52b	4	4
Welding Technology 52aL-52bL	4	4
English	-	3
Technology 71, 72	3	2
Technology 74	-	3
Technology 76	2	-
Physical Education	½	½
Total	16½	16½

Sophomore Year	Units	
	F	S
Welding Technology 62a-62b	3	3
Welding Technology 62aL-62bL	5	5
English	3	-
Electronics 10	3	-
American Institutions	-	3
State and Local Government	2	-
Health Science 1	-	2
Gen. Ed. Elective	-	3
Physical Education	½	½
Total	16½	16½

Students will be required to purchase personal safety equipment.

Those students who successfully complete the above curriculum will be eligible to receive the Certificate of Proficiency in Welding Technology.

Career Opportunities

The field of welding offers employment in automotive, aircraft, guided missiles, nuclear energy, railroads, radio, television, appliances, department stores and food processing

plants. The welding technician plays an important role in industry. He can join, separate and remove excess metals with various techniques, and he is able to work with ferrous, non-ferrous and exotic metals using TIG and MIG processes. The welding technician is the liaison between the welding engineer and the welder.

Telecommunications (Production)

Associate in Arts Degree with a Major in Telecommunications Production

Freshman Year	Units	
	F	S
Telecommunications 51	3	-
Telecommunications 52a	3	-
Telecommunications 60a	-	3
Telecommunications 66	-	3
Speech 1a	3	-
English	3	3
Drama 10	-	3
Electives	3	3
Physical Education	½	½
Total	15½	15½

Sophomore Year	Units	
	F	S
Telecommunications 52b	3	-
Telecommunications 60b	-	3
Telecommunications 61a	-	3
Telecommunications 65a-b	3	3
Business 120	3	-
American Institutions	3	-
State and Local Government	2	-
Health Education	-	2
General Education Electives	3	3
Electives	-	3
Physical Education	½	½
Total	17½	17½

66/Suggested Curricula (Continued)

Suggested Electives: Business 10, 58, 92a; Drama 14a-14b; Speech 33; Philosophy 7.

**Telecommunications (Technician)
Associate in Arts Degree with a Major in
Telecommunications Engineering**

Freshman Year	Units	
	F	S
Telecommunications 51	3	-
Telecommunications 52a	3	-
Telecommunications 60a	-	3
Telecommunications 65a-b	3	3
Telecommunications 66	3	-
English	-	3
Telecommunications 101a-b	3	3
General Education Elective	-	3
Physical Education	½	½
Total	15½	15½

Sophomore Year

	Units	
	F	S
Telecommunications 52b	3	-
Telecommunications 60b	-	3
Telecommunications 61a-b	3	3
American Institutions	3	-
State and Local Government	-	2
Health Education	-	2
English	3	-
Electives	3	6
Physical Education	½	½
Total	15½	16½

Suggested Electives: Drama 13a-13b; Life Science 10; Psychology 1a; Speech 1a-1b.

Vocational Gardening (Certificate Program)

The Certificate in Vocational Gardening is awarded by College of San Mateo upon completion of six semester courses and two years full-time practical experience in vocational gardening.

Also see "Horticulture."

Announcement of Courses

Practically all courses numbered from 1 to 49 are accepted by colleges and universities as transfer courses, assuming satisfactory grades. Certain colleges will accept, as transfer credit, units earned in many courses numbered 50 and above; such courses generally, however, are intended primarily as non-transfer courses.

Courses numbered 10 are specifically designed for General Education; the number 49 indicates Special Projects.

The credit value of each course in semester units is indicated by a numeral in parenthesis following the title. A semester unit of credit is based upon one hour of the student's time at the College per week in lecture or recitation throughout one semester, together with the time necessary in preparation thereof, or a longer time in laboratory or other exercises not requiring outside preparation.

Generally, in the following course descriptions, both semesters of a year's course are listed together if the first semester course is a prerequisite to the second semester course.

Evening courses are listed in this catalog and many regular day courses are also offered in the evening.

Specific information concerning class hours will be found in the Schedule of Classes for the semester.

Aeronautics

(Also see Meteorology 1 and 10.)

The College has Federal Aviation Agency approval for all day aviation programs. Evening classes carrying the same numbers as day classes are also approved.

§1 PRIVATE PILOT GROUND SCHOOL (3)

Three lecture hours per week.

Open to all students except Commercial Pilot majors.

History of aviation, opportunities in the aerospace field, regulatory bodies, and the social and economic implications of the aerospace industry. Fundamentals of flight navigation, meteorology and powerplants operation. This prepares the student for the F.A.A. private pilot examination.

*2a BASIC GROUND SCHOOL (Commercial Pilot) (3)

Three lecture hours per week.

Prerequisite: Concurrent enrollment in Aero. 3.

Preflight requirements, basic navigation, flight computer, use of basic flight manuals, aviation aeronautical chart reading, aviation weather, Federal Aviation Regulations and enroute emergency procedures.

§Evening only.

*Day only.

*2b ADVANCED GROUND SCHOOL (Commercial Pilot) (3)

Three lecture hours per week.

Prerequisite: Aero. 2a or equivalent. Concurrent enrollment in Aero. 3.

Navigation by VHF electronic aids, Air Traffic Control procedures, aviation weather, Federal Aviation Regulations and advanced instrument interpretations.

3 FLIGHT SIMULATION (Units variable)

Hours by arrangement.

Prerequisites: Day—enrollment in Aero. 2a, 2b or 8, or permission of instructor. Evening—Private Pilot's Certificate. May be repeated three times for credit.

Practice in Link Trainer to control altitude, find position and terminate flight by radio aids and instruments, use of automatic direction finding, visual omni range, and instrument landing system procedures. One unit of credit for each 51 hours of lab time.

5 AIRCRAFT POWERPLANTS (3)

Three lecture hours per week.

Theory, operation and nomenclature of reciprocating and turbine powerplants. Basic construction of induction, ignition, lubrication, propellers, systems, and use of performance curves.

6 AIRCRAFT (3)

Three lecture hours per week.

Study of subsonic, transonic and supersonic flight with emphasis on stability and control. Aircraft nomenclature, design features, systems components and construction, including fixed and rotary wing aircraft. Weight and balance, load factors calculations on aircraft and introduction to the Federal Aviation Regulations Systems.

7 FLIGHT OPERATIONAL DATA (2)

Two lecture hours per week.

Concurrent enrollment in Aero. 8, or completion of Aero. 8.

Operational data relating to flight within the conterminous United States, introduction to information available from National Flight Data Center and Federal Aviation Regulations for commercial and instrument flight.

*8 INSTRUMENT FLIGHT GROUND SCHOOL (3)

Three lecture hours per week.

Prerequisites: Aero. 2a, 2b, 3 and concurrent enrollment in Aero. 7.

Federal Aviation Regulations, navigation and meteorology, requirements for instrument flight. Preparation of flight logs and related flight planning.

10 INTRODUCTION TO AERONAUTICS (3)

Three lecture hours per week.

Implications of the aerospace industry including air transportation, manufacturing, general aviation, governmental agencies and military operations. Opportunities in the present aerospace industry and the social and economic impact of this fast-growing segment on the individual and the community.

***11, 12, 13, 14 FLIGHT TRAINING (2 units each)**

Prerequisites: The requirements to start actual flight training are concurrent enrollment in Aero. 2a and Aero. 6, one year of high school level Algebra with a grade of C or better, a raw score of 57 in the Otis test, a Class I Flight Physical without waivers.

A specific introduction to flight through actual flying experience in modern, instrument and radio-equipped aircraft. These courses are designed for the completion of the four phases of flight training for the Commercial Pilot requirements. Twenty hours of dual flight instruction and 20 hours of solo flight are provided for each phase or a total of 160 minimum hours of flight time.

Enrollment in Aero. 11 to 17 inclusive is conducted on an individual basis through the Aeronautics Division. It is recommended that appointments for interviews be arranged well in advance of the semester of intended enrollment to allow sufficient time for tests and examinations.

***15 INSTRUMENT FLIGHT TRAINING (1)**

Prerequisite: Commercial Pilot Certificate. (Refer to Aero. 11.)

The necessary instruction to qualify for the F.A.A. Instrument Pilot Rating. Twenty hours of dual flight instruction minimum.

***16 INSTRUCTOR FLIGHT TRAINING (1)**

Prerequisite: Aero. 14 or Commercial Pilot Certificate. (Refer to Aero. 11.)

Flight training in preparation for the Flight Instructor Rating. Twenty-five hours of dual instruction minimum.

***17 MULTI-ENGINE FLIGHT TRAINING (1)**

Prerequisite: Aero. 14 or Commercial Pilot Certificate. (Refer to Aero. 11.)

Flight training in preparation for the Multi-Engine Rating. Fifteen hours of dual instruction minimum.

25 AIRCRAFT MATERIALS (3)

Three lecture hours per week.

*Day only.

Aircraft materials, properties of metals, steel and its alloys heat treating and corrosion-resistant metals, aluminum and its alloys, magnesium, corrosion, plastic materials, honeycomb structure and fiberglass. AN Hardware, heat treating, ferrous and non-ferrous metals, inspection material.

***50 GENERAL MAINTENANCE (5)**

Five one-hour lectures per week.

Prerequisites: Concurrent enrollment in 50L.

Lectures covering current FAA technical requirements outlined in Advisory Circular 65-2B and subsequent revisions, and materials outlined in A/C 65-9.

50L GENERAL MAINTENANCE LABORATORY (3)

Five two-hour lab periods per week.

Prerequisites: Concurrent enrollment in Aero. 50.

Basic hand tool operations used in the overhaul, maintenance and repair of aircraft. Simple machine tool operation, including drill press, band saw and grinders. Standard shop practices, safety and procedures. Aircraft standard hardware including AN, NAS and MS standards. Inspection procedures using precision measuring tools and special inspection methods. Aircraft weighing and computations of weight and balance.

***51 APPLIED AERONAUTICS MATH (3)**

Three lecture hours per week.

Required for all "A & P" students who have not taken high school algebra.

An applied math course for the Airframe Powerplant Technology student. The aerospace application of common fractions, measuring instrument, English and metric measurement, applied algebra and formulas, percentage and its application, square root, graphs in aviation, applied geometry and mensuration, applied trigonometry, aircraft horsepower, simple mechanics and aerodynamics, logarithms, ratios and proportion. Introduction to the slide rule.

***60 AIRCRAFT ELECTRICAL SYSTEMS (3)**

Three lecture hours per week.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero 60L.

Direct and alternating current fundamentals pertaining to aircraft electrical systems and components. Aircraft generators and generator controls, motors and motor controls, starters and ignition systems, including installation, overhaul, maintenance and repair. Introduction to aircraft instrument systems.

***60L AIRCRAFT ELECTRICAL SYSTEMS LABORATORY (3)**

Three three-hour lab periods per week.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero. 60.

Practical experiments and practice in the disassembly, inspection, troubleshooting, repair, reassembly, testing and return to service of aircraft electrical systems and components.

***70 AIRCRAFT POWERPLANT MAINTENANCE (Reciprocating) (3)**

Three lecture hours per week.

Prerequisites: Aero. 5, 6, 50, 50L, and concurrent enrollment in Aero. 70L.

Study of the overhaul, maintenance and repair of aircraft propulsion units. Powerplant installation, operation procedures, testing, trouble-shooting and inspection of reciprocating engines. Basic theory of powerplants and development, ignition and valve timing, basic engine overhaul, fundamental powerplant requirements, powerplant design and construction.

***70L AIRCRAFT POWERPLANT MAINTENANCE LAB (Reciprocating) (3)**

Three three-hour lab periods per week.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero. 70.

Practice in the overhaul, maintenance and repair of aircraft propulsion units. Installation, operation, testing, trouble-shooting and inspection of reciprocating and turbine engines.

***71 AIRCRAFT POWERPLANT MAINTENANCE (Turbine) (2)**

Two lecture hours per week.

Prerequisites: Aero. 5, 6, 50, 50L, and concurrent enrollment in Aero. 71L.

Study of the overhaul, maintenance and repair of aircraft propulsion units. Powerplant installation, operation procedures, testing, trouble-shooting and inspection of turbine engines.

***71L AIRCRAFT POWERPLANT MAINTENANCE LAB (Turbine) (2)**

Two three-hour lab periods per week.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero. 71.

Practice in lubrication systems, magnaflux and fluorescent, penetrant or nondestructive, inspection methods, powerplant instrument installation.

***72 POWERPLANT INDUCTION SYSTEMS (2)**

Two lecture hours per week.

*Day only.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero. 72L.

Theory and principles of operation of aircraft powerplants induction systems, including float and pressure type carburetors, fuel injection systems, superchargers and turbine fuel controls, fuel and induction systems, aircraft plumbing systems, carburetors, fuel injection supercharging systems.

***72L POWERPLANT INDUCTION SYSTEM LABORATORY (2)**

Two three-hour lab periods per week.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero. 72.

Practice in the disassembly, inspection, repair, adjustment, reassembly, test, installation and trouble-shooting of aircraft induction systems and components.

***73 AIRCRAFT PROPELLERS (2)**

Two lecture hours per week.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero. 73L.

Theory of operation, maintenance and repair of aircraft propellers and propeller control systems, and rotors and rotor control systems. Typical installations, operation, testing and trouble-shooting of propeller and rotor systems. Theory of wood and metal propellers, hydraulic and electrical controls, governors and control systems, propeller installation and maintenance.

***73L AIRCRAFT PROPELLERS LABORATORY (2)**

Two three-hour lab periods per week.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero. 73.

Practice in the overhaul, maintenance and repair of typical propellers, propeller controls, rotors and rotor controls. Emphasis on inspection, maintenance, troubleshooting, installation and operation.

***74 POWERPLANT REPAIR FACILITIES (3)**

Three lecture hours per week.

Prerequisites: Aero. 5, 6, 50, 50L, 70, 70L, 71, 71L, 72, 72L, 73, 73L and concurrent enrollment in Aero. 74L.

Study of practices and procedures pertaining to the operation of certificated powerplant repair facilities. Emphasis on domestic operational ratings, facilities, personnel, inspection systems, required equipment and material, privileges and limitations, maintenance and performance standards, powerplant repair, technician ethics, aircraft maintenance safety, weight and balance, inspection procedures, test stand procedures, required inspections, documents, services and handling, Federal Air regulations.

***74L POWERPLANT REPAIR FACILITIES LAB (3)**

Three three-hour lab periods per week.

Prerequisites: Aero. 5, 6, 50, 50L, 70, 70L, 71, 71L, 72, 72L, 73, 73L and concurrent enrollment in Aero. 74.

Practice of procedures in the operation of a powerplant repair station. Practical application of typical repair station operations conforming to Federal Aviation Regulations.

§75 AIRCRAFT TURBINE POWERPLANTS (3)

Three lecture hours per week.

Introduction to jet propulsion theory, basic physics applied to jet propulsion, types and models used, comparison and results of different applications, a survey of the different models used in present-day aircraft and problems in operation. Study of turbine engines, turbo jet, theory turbo prop, theory fuel control system design characteristics, lubrication system, ignition system, installation, trimming, starting and stopping, fire control.

***80 AIRCRAFT FLUID AND ENVIRONMENTAL CONTROL SYSTEMS (2)**

Two lecture hours per week.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero. 80L.

Aircraft hydraulic, pneumatic, landing gear, environmental control, ice and rain protection, and vacuum systems.

***80L AIRCRAFT FLUID AND ENVIRONMENTAL CONTROL SYSTEMS LABORATORY (2)**

Two three-hour lab periods per week.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero. 80.

Familiarization and procedures of overhaul, inspection, trouble shooting, repair, and testing of aircraft fluid, environmental control, ice and rain protection, landing gear and vacuum systems.

***81 AIRCRAFT SHEETMETAL STRUCTURES (3)**

Three lecture hours per week.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero. 81L.

Shell structures, manufacturing practices and maintenance procedures. Emphasis on fabrication, repair, inspection and corrosion protection methods. Aircraft materials, including aluminum, steel, corrosion-resistant metals, magnesium, honeycomb structure and fiberglass. Sheetmetal structures, sheetmetal fabrication and repair, types of repair materials, riveting, heat treating, corrosion prevention and treatment and stressed skin.

*Day only.

§Evening only.

***81L AIRCRAFT SHEETMETAL STRUCTURES LAB (3)**

Three three-hour lab periods per week.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero. 81.

Theory, repair and maintenance of sheetmetal structures. Inspection and corrosion protection procedures. Riveting, heat treating and layout procedures for fabrication and repair of aircraft structures.

***82 AIRCRAFT WELDING (2)**

Two lecture hours per week.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero. 82L.

Study of oxyacetylene, conventional arc and inert gas welding as applied to aircraft structures and components. Fabrication and repair of aircraft structures by welding, brazing and hand-soldering ferrous and non-ferrous metals. Welding gas, metals and techniques, ferrous heat treating, theory of TIG welding, soldering, brazing.

***82L AIRCRAFT WELDING LABORATORY (2)**

Two three-hour lab periods per week.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero. 82.

Practice in the fabrication and repair of aircraft structures and components by welding, brazing and soldering. Emphasis on inspection, alignment and corrosion protection of welded structures.

***83 AIRCRAFT WOOD, DOPE, FABRIC AND LAMINATES (2)**

Two lecture hours per week.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero. 83L.

Theory, repair and maintenance of wood or metal fabric covered components, laminates, including honeycomb, fiberglass and plastic structure. Cable swaging and splicing, soldering and brazing.

***83L AIRCRAFT WOOD, DOPE, FABRIC AND LAMINATES LABORATORY (2)**

Two three-hour lab periods per week.

Prerequisites: Aero. 5, 6, 50, 50L and concurrent enrollment in Aero. 83.

Practice in the repair and finishing of aircraft wood structures. Textile covering installation, doping and finishing techniques, including synthetic fabrics. Application by spray painting of aircraft finishes, markings and paint schemes.

***84 AIRFRAME REPAIR FACILITIES (3)**

Three lecture hours per week.

Prerequisites: Aero. 5, 6, 50, 50L, 60, 60L, 80, 80L, 81, 81L, 82, 82L, 83, 83L and concurrent enrollment in Aero. 84L.

Study of practices and procedures pertaining to the operation of certificated airframe repair facilities. Emphasis on domestic operational ratings, facilities, personnel, inspection systems, required equipment and material, privileges and limitation, maintenance and performance standards. Technician ethics, aircraft maintenance safety, weight and balance, inspection procedures, certificate A/C, instrument and communication equipment, vacuum system maintenance, Federal Air Regulations, flight control surface and mechanisms, rigging, and assembly. Inspection forms, flares, installation magnaflux, penetrant inspection, non-destructive testing.

***84L AIRFRAME REPAIR FACILITIES LABORATORY (3)**

Three three-hour lab periods per week.

Prerequisites: Aero. 5, 6, 50, 50L, 60, 60L, 80, 80L, 81, 81L, 82, 82L, 83, 83L and concurrent enrollment in Aero. 84.

Practice of procedures in the operation of an aircraft repair station. Practical application of typical repair station operations conforming to Federal Aviation Regulations.

§91a-91b AIRCRAFT POWERPLANT MECHANICS (4-4)

Three hours lecture, three hours shop per week.

Prerequisite: Applicant must have completed the FAA time requirements (18 mos.) prior to enrollment. Original enrollment may be in either Aero. 91a or 91b, or permission of instructor.

Basic theory, maintenance, lubrication, carburetion and fuel systems, ignition systems, propellers, electrical systems, FAA regulations and trouble-shooting, preparation for the FAA written examination.

§92a-92b AIRFRAME MECHANICS (6-6)

Three hours of lecture and six hours of lab per week.

Prerequisite: Permission of the instructor or completion of the FAA time requirements (18 mos.) prior to enrollment. Original enrollment may be in either Aero. 92a or 92b.

This course includes welding, sheet metal, hydraulics, fabric and dope, controls, aircraft electrical systems and fuel system.

Prepares the student for the FAA written and practical examinations.

§98a COMMERCIAL GROUND SCHOOL (3)

Three lecture hours per week.

Prerequisites: Aero. 1 or 2a or permission of the instructor.

*Day only.

§Evening only.

Instruments, radio and electronic navigational aids and currently applicable Federal Air Regulations for Commercial Rating.

§98b INSTRUMENT GROUND SCHOOL (3)

Three lecture hours per week.

Prerequisite: Aero. 98a or permission of the instructor.

Piloting practices, problems, computations and solutions, and the theory and methods employed in conduct of flights using electronic navigation, for FAA Instrument Rating.

Anthropology

2 CULTURAL ANTHROPOLOGY (3)

Three hours of lecture per week.

Study of culture as the man-made environment of particular societies. Introduction to the anthropological point of view. Cross-cultural comparisons of child-training, personality, kinship and family, economy, politics, religion and relationships between these in specific societies and sub-cultures, including contemporary ethnic groups in the United States.

3 PREHISTORY (3)

Three class hours per week.

Development of archaeology and its basic concepts; sequences of cultural development in the Old and New Worlds. Theories of culture, origin, growth and evolution; relationship of environment, technology, population size, diffusion and cultural complexity.

***4 INTRODUCTORY ARCHAEOLOGY (3)**

Five lecture field hours and 1½ lab hours per week.

Prerequisite: Anthro. 3, or Anthro. 3 taken concurrently.

Techniques of scientific excavation, including recording and cataloging specimens under carefully controlled field conditions. Excavating to be done on local Indian sites, five hours per week on either Tuesday or Thursday. A one and one-half laboratory class (on whichever day the class does not dig) to process and catalog the excavated materials. Enrollment limited to 25.

40 FIELD STUDY IN ARCHAEOLOGY (4)

Six lecture hours and three lab hours and eight field hours per week.

Offered Summer Session only.

Introduction to basic archaeological concepts and heuristic units; relationship of archaeology to ethnology, history and prehistory. The purpose of this course is to combine theory

and history of archaeology, laboratory processing of archaeological materials and field instruction of excavation techniques. To provide experience and training under actual field conditions and in the laboratory.

***49 SPECIAL PROBLEMS (1-2)**

Prerequisite: Anthro. 2, or permission of the instructor.

Research topics and field study to be arranged in consultation with the instructor.

Architecture

***10 SURVEY OF CONTEMPORARY ARCHITECTURE (3)**

Three hours lecture per week.

Basic values in contemporary architecture; its relationship to the environment, the individual and society—the home, the neighborhood, the region. Outstanding architects and planners and their contributions. Films, slides and individual research.

***11 Graphics (1)**

Three lab hours per week.

Prerequisite: Concurrent enrollment in an Architecture course, or consent of instructor.

Representational freehand drawing for Architecture majors, covering perspective, composition and specific techniques in black and white media.

May be repeated for a total of two semester units.

***12 GRAPHICS (1)**

Three lab hours per week.

Prerequisite: Concurrent enrollment in an Architecture course, or consent of instructor.

Representational freehand drawing for Architecture majors, covering perspective, composition and specific techniques, using brush and water color.

May be repeated for a total of two semester units.

***14 ESSENTIALS OF DRAFTING (3)**

Two hours lecture, four hours lab per week.

Introduction to history and principles of graphic communication. Use of instruments, drawing board geometry, lettering, technical sketching, orthographic projection, sectioning and dimensioning, pictorial drawing. Fundamentals of architectural and topographic drafting.

(This course is also taught as Art 14.)

15a INTRODUCTION TO DRAWING AND PERSPECTIVE (2)

Six lab hours per week.

Prerequisites: Arch. 11, Math. 12 or its equivalent, Arch. 14 or equivalent. Course should be taken concurrently with Arch. 12 and 22.

Basic techniques in the graphic communication of architects: orthographic and isometric projection, descriptive geometry, mechanical perspective, and shades and shadows.

15b DELINEATION (2)

Six lab hours per week.

Prerequisites: Arch. 11, 12, 15a. Course should be taken concurrently with Arch. 23.

Three-dimensional representations with various drawing media which will enable the student to express his architectural ideas and designs.

***16-17 ELEMENTARY STATICS AND STRENGTH OF MATERIALS (3-3)**

Taught by Engineering staff. For content and prerequisites, refer to Engin. 16-17.

***21 ARCHITECTURAL DESIGN (4)**

Three hours lecture and three hours lab per week plus three hours by arrangement.

Prerequisite: Arch. 14 or equivalent and concurrent enrollment in Arch. 11. Arch. 14 may be taken concurrently with 21.

Introduction to the broad principles of Architecture and its unique language. An investigation into the major facets of the profession from basic design and methods of expression and presentation to the function of an architect, environmental analysis, form and composition, and basic design.

A basic preparation course for the student to enable him to develop successfully in the design courses 22, 23, 24.

***22 ARCHITECTURAL DESIGN AND MATERIALS (4)**

Three hours lecture and three hours lab per week plus three hours by arrangement.

Prerequisites: Arch. 21, concurrent enrollment in Arch. 12 and Arch. 16.

Principles of architectural design, synthesis of form, space and color, esthetic and environmental aspects. Introduction to schematic presentation, preliminary studies in spacial relationships involving human and architectural criteria.

***23 ARCHITECTURAL DESIGN AND PRACTICE (4)**

Three hours lecture and three hours lab per week plus three hours by arrangement.

Prerequisites: Arch. 22 with a grade of C or better, and concurrent enrollment in Arch. 17. Engineering 1a is recommended.

Architectural design, involving advanced projects, environmental, esthetics and programming as design determinates.

***24 ARCHITECTURAL DESIGN AND PRACTICE (4)**

Three hours lecture and three hours lab per week plus three hours by arrangement.

Prerequisites: Arch. 23 and Arch. 17.

Architectural design, involving advanced projects. Introduction to electrical, mechanical and plumbing requirements. Emphasis on structural details, analysis and calculations. Presentation of an integrated solution with working drawings for critique.

***49 DESIGN PROBLEM (1 or 2)**

Instructional hours by arrangement; 60 to 120 hours of student work.

Prerequisite: Permission of instructor.

An advanced course of individualized study involving broader aspects of architectural design and practice.

Art

For Art majors, see program outlined in "Suggested Curricula." While intended primarily for students taking semi-professional or pre-major curricula in Art, the courses marked with an (x) are especially recommended for members of the community interested in effective use of leisure time.

1a (x) HISTORY OF ART (3)

Three lecture hours per week.

Ancient, Classic, Early Christian and Medieval art. A survey of man's expression of art from the days of the cave man until the late Middle Ages, with emphasis on architecture and sculpture.

1b (x) HISTORY OF ART (3)

Three lecture hours per week.

Prerequisite: Art 1a.

A survey of Gothic, Renaissance and Baroque art. Emphasis is placed on the development of painting from the 14th to the 18th Century.

***1c (x) HISTORY OF ART (3)**

Three lecture hours per week.

Prerequisites: Art 1a and 1b.

A survey of European and American art from mid-18th Century until the present. Emphasis is placed on the development of modern painting as a reaction against earlier traditions.

2a-2b (x) FORM AND COMPOSITION (3-3)

Three lecture hours and three lab hours per week.

Prerequisite: 2a—None; 2b—Art 2a.

2a—Study of three-dimensional form and space relationship, with charcoal rendering of line, mass and values through a sequence of original problems based on underlying geometric forms.

2b—Advanced composition; further study of three-dimensional form, in black and white and in color; illustration; experimental pictorial composition.

***3a COLOR TECHNOLOGY (3)**

Three lecture hours per week.

Prerequisite: Art 2a-2b.

Introduced 17 years ago to meet the ever-increasing demand for a course presenting color as communication. Knowledge of the four elements of color is gained with problems requiring one or more of the many media/expressions of contemporary art communication. The Ostwald system of color harmony/notation is studied and applied. This course requires six hours per week of outside study and problem execution.

***3b COLOR TECHNOLOGY, ADVANCED (3)**

Three lecture hours per week.

Prerequisite: Art 3a.

Paint/color is integrated with light/color with both two-dimensional and three-dimensional projects. Opaque and transparent paints, projection, optical effects, sound/light and polarization are some of the many media/expressions that will be used by students. Emphasis is placed on individual creativity and ability to effect the desired effect/solution.

***4 PERSPECTIVE (2)**

Two lecture hours per week.

Through a series of problems, the student gains the basic fundamentals of perspective necessary for illustrating landscapes, still-life objects and groups of buildings.

Does not meet requirements for Mechanical or Architectural Drafting.

5a-5b DESIGN (3-3)

Three lecture hours per week.

Prerequisite: 5a—None; 5b—Art 5a.

5a—Development of problems dealing with two-dimensional design, such as repeat pattern, collage, mosaic, texture and line studies. Exploration of media and techniques will be encouraged.

5b—Volume, line and space studies using paper, wire, wood, string and plaster of paris construction. Mobiles, stabiles and similar objects will be created.

6a (x) PAINTING, TWO-DIMENSIONAL (3)

One hour of lecture and three hours of lab per week.

Prerequisite: Art 2a-2b.

Awareness of the problem presented by the two-dimensional canvas and the many techniques available to effect a solution and to achieve a personal expression. Painting is stressed as color communication acquired by increasing physical and psychological control of the paint medium. Ability to mix colors and modify hues, to progress and recess form, to distribute light and darks, and to shift intensities is correlated with every study.

6b (x) PAINTING: THREE-DIMENSIONAL (3)

One hour of lecture and three hours of lab per week.

Prerequisite: Art 6a.

While problems continue as two-dimensional, some studies will be assigned which consider painting as three-dimensional and architectonic. The communication of painting is viewed as one of assembly as well, one of construction. The use of optical material, polarization, and rear/front projection is demonstrated and utilized to configurate kinecasting as a form of three-dimensional painting. May be repeated once for credit.

7a-7b (x) WATERCOLOR (3-3)

Four hours per week.

Prerequisites: 7a—Art 2a-2b; 3a recommended.

Through exercises and renderings, the student is made familiar with the various styles of watercolor, its effects and possibilities. Materials, color, perspective, light and shade will be studied.

***8 PUBLIC SCHOOL ART (3)**

Two lecture hours and four lab hours per week.

To give the elementary Education major a background in design, color and the use of materials in executing problems such as the following: papier-mache, paper sculpture, stenciling, vegetable printing, collage and crayon scratch board. Emphasis is on the creative and imaginative approach.

10a (x) INTRODUCTION TO THE ARTS (3)

Three lecture hours per week.

*Day only.

An introduction to painting, music and theatre, stressing basic elements, problems of organization, and contemporary experiments with media and forms.

***12a LETTERING (2)**

Two lecture hours per week.

Development of proficiency in the freehand and mechanical lettering of the three main alphabetical types—Gothic, Roman and Text—with variations of these types. Emphasis is placed upon letter proportions, character of style and proper spacing of letters and words.

***12c BRUSH LETTERING (1)**

Three lab hours per week with lecture included.

Practice in the basic strokes of the various types of free brush lettering, such as Sans Serif, Roman and Script through the production of showcard lettering.

13a-13b PENCIL DRAWING AND PEN DRAWING (3-3)

Three lecture hours per week.

Prerequisites: 13a—Art 4; 13b—Art 13a.

13a—Discussion of the materials and techniques of pencil work, the depiction of various forms: round, cylindrical, planes, textures and various complex forms, draperies.

13b—Materials and techniques in common use. Traditional and contemporary pen expression. Rendering of every-day objects and scenes. Methods of depicting shade and shadows, textures. Acquiring skill in value transition.

***14 ESSENTIALS OF DRAFTING (3)**

Two lecture hours and four lab hours per week.

Introduction to history and principles of graphic communication. Use of instruments, drawing board geometry, lettering, technical sketching, orthographic projection, sectioning and dimensioning, pictorial drawing. Fundamentals of architectural and topographic drafting.

This course is identical to Architecture 14.

***15 LIFE DRAWING (2)**

One lecture and three lab hours per week.

Prerequisites: Art 2a-2b.

The human form in art; study from living professional models with a view of acquiring a thorough knowledge of the human figure as expressed in art. Drawing in pencil or charcoal is recommended for the beginning student.

May be repeated for a total of six units.

17a-17b-17c-17d ETCHING (2-2-2-2)

One lecture and three lab hours per week.

Prerequisites: 17a—Art 2a. (\$5.00 lab fee in each course.)

The practice of printmaking as a fine art, with emphasis upon the history, techniques and criteria of the Intaglio Etching Process.

19 (x) ART/COMMUNICATION: 20TH CENTURY (3)

Three lecture hours per week.

Formulated 16 years ago, the course stresses that art is communication as communication is art. Art/communication is the many media and expressions that determine, effect and perpetuate the structures of man's basic needs. These needs are coexistent and infinite; therefore, the media/expression of these constants are of equal importance. No one art/communication can be, culturally, of greater prominence than another. Various media/expressions, as: painting, social expression, architecture, photography, ceramics, to list a few, are discussed, analyzed and placed in proper communal perspective.

20a-20b (x) CERAMICS (3-3)

Six hours theory and lab per week.

Prerequisite: 20a—None; 20b—20a.

Elementary clay construction including pinch, coil, and slab; methods of ornamentation, glazing, firing, introduction to potter's wheel.

There are additional fees for firing and glazing.

21a-21b GLASS BLOWING (3-3)

Two lecture hours and four lab hours per week.

Prerequisite: Ceramics 20a.

An introduction and study of the methods of glass blowing and design. The theory and practices of solving both preliminary and finished stages of this art form. The first semester emphasizes production research; the second semester emphasizes three-dimensional design.

There are additional fees for firing and glazing.

22a-22b SCULPTURE (3-3)

Six hours theory and lab per week.

Prerequisites: 22a—Art 15; 22b—Art 22a.

The relationship of design applied to three-dimensional form by study of the human figure in clay. Sculpture is required at most State Colleges for a Fine Arts major.

26 WOOD FORMS AND RELATIONSHIPS (3)

Two lecture hours and four lab hours per week.

Prerequisite: None. (\$5.00 lab fee.)

Knowledge of woods; methods of joining, designing, developing and constructing art objects. Practice with wood-working tools.

*Day only.

***27a-27b (x) STAGE DESIGN (3-3)**

Three lecture hours per week.

Prerequisite: 27a—None; 27b—Art 27a.

27a—Experience in executing designs for theatrical settings. Analysis of plays and scenic problems. Emphasis is upon solving the problems involved in preparing a design for presentation. No experience in drawing required.

27b—Special problems in scene design.

This course is also taught as Drama 27a-b.

***40 VISUAL INTERPRETATION (3)**

Three lecture hours, one seminar hour per week.

Prerequisite: Art 41a or concurrent registration in Art 41a.

Employing photographs, slides, cinema and three-dimensional forms, the student is asked to interpret the value of objects in each person's everyday world. Course involves projects utilizing the box camera, with a portion of the semester for a historical sketch of cinema.

41a-41b PHOTOGRAPHY (ELEMENTARY & ADVANCED) (3-3)

Two lecture hours and four lab hours per week.

Prerequisite: 41a—Art 2a; 41b—Art 41a.

Use of the exposure meter, filters, print papers, formulas and processing, special lenses and shutters. Problems of artificial and natural lighting, of enlarging or of spotting prints, and of print finishing and mounting. Individual projects are chosen from the fields of scenic and nature photography, as well as portraiture.

It is recommended that Art 40 be taken in conjunction with Art 41a.

***41c PHOTOGRAPHY WORKSHOP (3)**

Two lecture hours and four lab hours per week.

Prerequisite: Art 41a or equivalent.

Emphasis on the broader aspects of technical perfection, visual awareness and creative presentation. Areas covered include experimental, documentary and new material uses. Various exhibition methods, contemporary and creative forms of photographic presentations are explored. The students are unified into a single working group presenting and exploring each other's creative instinct.

43a-43b COLOR PHOTOGRAPHY (3-3)

Two lecture hours and four lab hours per week.

Prerequisite: Art 3a, and 41a.

Color exposure, transparency, negative development and CP printing. Use of contemporary processing equipment and methods. Precise printing techniques and the investigation of color changes will be explored. Additive and subtractive color rendering for creative use are employed. Designed to

allow the student the greatest amount of creative freedom while being involved in the learning situation.

***49 SPECIAL PROJECTS (1 or 2)**

Hours by arrangement.

Independent study, selected on the basis of individual need and interest. The student will work under the direct supervision of the instructor.

***52 (x) FIGURE DRAWING (2)**

One lecture hour and three lab hours per week.

Graduated problems using the clothed figure, and dealing with the drawing of the structure and proportions of the figure at rest and in motion. Through contour line, gesture and volume studies, and using different media as wash, crayons, pencil, the student acquires an ability to render a sketch of complete spontaneity and expression.

May be repeated for credit.

***53 FASHION ILLUSTRATION (2)**

One lecture hour and three lab hours per week.

Presenting principles of fashion illustration, design and layout in various media. Emphasis on style interpretation of accessories and clothes from the live model for magazine and newspaper reproduction.

***54 ADVERTISING ART (2)**

Two lecture hours per week.

Prerequisites: A background in drawing, painting, lettering, design and color, and completion of at least six of the Art prerequisites listed: Art 2a, Art 3a, Art 5a, Art 6a, Art 12a, Art 13a, Art 4, Art 7a.

Layouts, comprehensives and finished art work of items of the following type: newspaper advertising, spot illustrations, mailers and posters. Color separation is included in at least one of the problems. The major methods of reproduction in printing are explained. The course is presented with an emphasis upon the creative approach.

§62 SILKSCREEN AND SERIGRAPHY (2)

Three hours per week.

Through progressive problems the student learns the technique and effect of the various types of silkscreen stencils: paper, glue, tusche, varnish and film. Particularly recommended for elementary school teachers.

May be repeated for credit.

***63a-63b FASHION DESIGN (2-2)**

One hour lecture and two hours lab per week.

Prerequisite: 63a—None; 63b—Art 63a.

*Day only.

The current fashion picture: form, color, fabric, draping, drafting, sketching, historical research, abstraction and stylizations as they affect the designing of clothing. Emphasis is placed on original designing by the students. During the second semester, the emphasis is on historical research and national costumes as they affect designers, the development of a designer's line and the preparation of finished designs.

68a-68b INTERIOR DESIGN (3-3)

Three lecture hours per week.

Prerequisite: None. Either semester may be taken separately.

68a—Analysis of the modern home—site, design, furnishing and decoration.

68b—History of furniture, with examination of "period styles," their influence upon modern interior decoration and their values in solving problems.

***70 PORTFOLIO (1)**

Three lab hours per week.

Prerequisite: Sophomore standing.

Purpose is to help the art student prepare his art and course work for his portfolio. The instructor will analyze, evaluate and suggest to the student the quality of work necessary for portfolio presentation to art schools, colleges, universities and agencies. Instruction will be given in portfolio organization, selection of work, matting, labeling and defining the objective of the art work.

***72a-72b PLANT FORM AND DESIGN (2)**

One two-hour lecture per week with group and individual instruction.

Demonstrations and lectures illustrating harmonious and unique combinations of plant forms for home decorations. Arrangements designed for general and specific occasions using plant material offered by the different seasons throughout the year.

***80 LINE, DESIGN, FORM, COLOR (Cosmetology Students) (2)**

Two lecture hours per week.

Basic elements of design and color as they affect the art of cosmetology. The use of linear design, of shapes, forms and mass, sketching and brush techniques, value scales and color.

Astronomy

***1a-1b GENERAL ASTRONOMY (3-3)**

Three lecture hours per week.

Prerequisites: Astro. 1a—Trigonometry. High school Physics desirable. Astro. 1b—Astro. 1a, or consent of instructor.

A survey of current concepts of the universe with an emphasis on the physical principles involved. Designed primarily for Science majors. Astro. 1a—The solar system: sun, earth, planets, satellites, comets, discussion of the tools and techniques used in gathering information. Astro. 1b—Astrophysics, the stars, Milky Way, the galaxies, cosmogony.

10 INTRODUCTION TO ASTRONOMY (3)

Three lecture hours per week.

Prerequisites: High school Algebra and Geometry or permission of the instructor.

A survey of Astronomy satisfying the science requirements in state colleges and universities. The course includes the motions of the earth, planets, comets, meteors, the sun, double stars, motions of the stars, variable stars, the Milky Way system and galaxies, together with an introduction to the methods employed by astronomers in gathering information.

***48a-48b-48c PLANETARIUM TRAINING PROGRAM (1-1-1)**

Prerequisites: Astronomy 10, or Astr. 1a AND consent of instructor.

One lecture and one lab hour per week.

An introduction and training in the theory and practice of planetarium programming and education. The series is designed to be taken by students with an interest in physical science education, and parallels similar courses at other Bay Area colleges who are part of the planetarium training consortium.

48a—Introduction to the planetarium, coordinate systems, time, calendar, planetary motions.

48b—Introduction to planetarium programming, lecture presentation, planetarium operation, lecture-demonstration techniques.

48c—Intermediate planetarium programming, lecture preparation, program design and structuring, special effects; each student will prepare and present one original planetarium program.

***49 SPECIAL PROBLEMS (1-2)**

Hours by arrangement.

Prerequisites: Astro. 1a, 1b or 10, sophomore standing and permission of the Physical Science Chairman.

Individual study by the student on a topic chosen by him and approved by the instructor. Course will give student a foundation in the methods of scientific research in one of the fields of astronomy. Topic is developed into a paper.

*Day only.

Audio-Visual

***61a-61b AUDIO-VISUAL AIDS (1-1)**

One lecture hour, two lab hours by arrangement, per week.

Techniques of operation and care of equipment (motion picture, slide, filmstrip and overhead projectors). Production of projectiles for the various projectors is included.

Of special value to those seeking teaching as a career, and for all prospective candidates in the fields of public relations, music and communications.

Biology

1 INTRODUCTION TO THE LIFE SCIENCES (3)

Three lecture hours per week.

Prerequisites: None. Open to all students except those who are currently enrolled in or have completed a college course in the Life Sciences or Anthropology 1. Designed for education majors.

A study of the origin and characteristics of life, involving the evolution of man and his environment. The concepts of cellular biology, plant and animal interrelationships and interdependencies, and man's role in the world of living things will be examined in relation to contemporary problems. Complementary to Physical Science 10.

2 GENERAL BIOLOGY (4)

Three lecture hours and one three-hour lab period per week, with field trips during the regular period.

Broad principles of structure, function, evolution and interdependence between plants and animals. Special attention to the study of life histories of local forms including emphasis on their structure and function, ecology and evolution.

3 PLANTS AND MAN (3)

Three lecture hours per week.

An introduction to modern biological science, the scientist and scientific research in modern society. Basic principles of the living state as exemplified by the plants inhabiting our earth, interrelationships of both structure and function of plants, biotic interrelationship, genetics and evolution. Plants and the development of human civilizations will also be treated, as well as the role plants play in the population problems of the world.

***4 MICROBES AND MAN (3) (Fall only)**

Three lecture hours per week.

Basic principles regarding the structure and function of cells as illustrated by micro-organisms. Importance of micro-organisms in the economics of nature. Beneficial uses of micro-organisms. The host-parasite relationship and the control of infectious diseases.

5 INTRODUCTION TO ECOLOGY OF THE WEST (3)

Three hours of lecture per week.

Prerequisite: None; however, Biology 1 or 2 is recommended.

Introduction to the ecology of the West with emphasis on California and the Bay Area. The ecological aspects of the plant and animal groups and their controls by geology, climate, each other and by man.

***7 THE HUMAN MACHINE (3) (Spring only)**

Three lecture hours per week.

Prerequisites: None; Biology 1 or 2 recommended.

A study of the human body, its anatomy and physiology. The relationship of the cell to functional systems, i.e., nervous system, respiratory system, endocrine system. Functional correlations of the nine systems will be used to depict the dynamic state of the human body.

11 PHYSICAL ANTHROPOLOGY (3)

Three hours of lecture per week.

The relationship of Homo sapiens to lower animals, the evidence of man's evolution, genetics, human racial stocks and man's early prehistory.

15 ESSENTIALS OF CONSERVATION (3)

Three hours of lecture per week.

Consideration of the national resources of the U.S., including forests, grasslands, wildlife, water, marine, soils, minerals and recreational problems and practices in resource management.

***16 INTRODUCTION TO FORESTRY (3) (Fall only)**

Three lecture hours per week.

A study of the forest as a biological community; introduction to the scientific and economic basis of forestry including topics from ecology, dendrology, entomology, pathology, silviculture, mensuration, utilization and economics. Careers in forestry.

***17 FORESTRY SURVEYING (3)**

Two lecture and three lab hours per week.

Prerequisite: Geometry or concurrent enrollment in Geometry.

*Day only.

§Evening only.

Introduction to theory and practice of forest surveying. Instruction in use of forest surveying instruments: hand compass, staff compass, abney levels, topographic and engineer's tape, engineer's level and transit. Practice in the field of forestry.

§18a-18b HORTICULTURE BOTANY AND PLANT MATERIALS (2-2)

Three hours per week.

The principles of plant classification, description, nomenclature, morphology, use of keys. Photosynthesis, transpiration, osmosis, mendelism, floral families. The study in class of plants commonly used in California parks and gardens. Emphasis on plant identification.

This course is identical to Horticulture 95a-95b.

***19 PLANT GROWING (3) (Fall only)**

Two lecture hours and three lab hours per week.

Soil, plant and fertilizer relationships. Physical, chemical and biological properties of soils as related to horticulture; soil sampling and testing; organic materials; water relationships; and the compositions, value, selection, use and application techniques of fertilizer materials and soil amendments. Practical experience in growing plants in the greenhouse.

This course is identical to Horticulture 112.

***20 INTRODUCTION TO CELL BIOLOGY (4)**

Three lecture hours and one three-hour lab period per week.

An evaluation and analysis of the living cell and its component parts. The metabolism of the cell and bioenergetics involved will be examined as they relate to cellular development, growth, and reproduction.

***21 GENERAL ZOOLOGY (5) (Spring only)**

Three lecture hours and six lab hours per week.

Prerequisite: Biology 20 or consent of instructor.

An introduction to the facts and principles of animal biology. This course will include a molecular approach to zoology, including morphology, energetics, genetics. Emphasis is directed upon the comparative anatomy of the chordates. Some discussion of evolutionary concepts will be included.

***22 GENERAL BOTANY (5) (Fall only)**

Three lecture hours and six lab hours per week.

Prerequisite: Biology 20 or consent of instructor.

Principles of biology as illustrated by plants with emphasis on structure, physiology and reproduction in green plants.

***23 ANATOMY (4) (Fall only)**

Three lecture hours and one three-hour lab period per week.

Prerequisite: Satisfactory completion of a high school or college-level General Biology course.

Designed to familiarize the student with the structure of the human body. Laboratory study and dissection of human and higher mammals. Primarily intended for students of Nursing, Physiotherapy, Physical Education and other related fields. Elective for Pre-Dental, Pre-Medical and Pre-Veterinarian students.

***24 INTRODUCTORY PHYSIOLOGY (5) (Spring only)**

Three lecture hours and two three-hour lab periods per week.

Prerequisites: One course selected from Anatomy, General Biology, or Zoology. A knowledge of elementary chemistry and physics is recommended but not required.

A course designed to familiarize the student with the functions of the organs and systems of the human body. This course is for students of Nursing, Physiotherapy, Physical Education, Psychology and other related fields. Elective for Pre-Dental, Pre-Medical and Pre-Veterinarian students.

***25 GENERAL BACTERIOLOGY (5) (Fall only)**

Three lecture hours and six lab hours per week.

Prerequisite: One semester of Chemistry in college; not open to first semester freshmen. Recommended: Biology 20, Chemistry 1a or consent of instructor.

An introduction to the morphology and physiology of microorganisms, especially the bacteria, their control by chemical and physical means, and their role in the disease process. Laboratory techniques in culture and identification.

Recommended for Agriculture, Biochemistry, Home Economics, Nursing, Sanitary Engineering, Physical Education and Life Science majors.

***30 MARINE BIOLOGY (3) (Fall only)**

Two lecture hours and one three-hour lab period per week.

Prerequisite: Biology 2 or consent of instructor.

Introduction to physical oceanography, marine animals, marine plants and marine ecology. Major emphasis is given to the natural history of marine forms, including their taxonomy, morphology and physiology. Bays, estuaries and oceans are described as habitats.

***31 GENERAL ENTOMOLOGY (4) (Spring only)**

Two lecture hours and two three-hour lab periods per week.

Prerequisite: Sophomore standing (24 units) with one course in the Biological Sciences or consent of the instructor.

Classification, life histories, morphology, physiology and ecology of insects; their comparative and functional relationship and emphasis upon their relationship to man.

*Day only.

§Evening only.

***32 DENDROLOGY (3) (Spring only)**

Two hours of lecture and three hours of lab per week.

Prerequisite: Biology 22 or consent of instructor.

Lectures, laboratories and field trips; classification, distribution, growth requirements and identification of forest trees and shrubs. Field trips will be scheduled on weekends.

***33 GENETICS (3) (Spring only)**

Three class hours per week.

Prerequisite: One course in the Biological Sciences or consent of instructor.

Introduction to the principles of heredity in plants and animals with specific reference to human inheritance and biochemical genetics. The importance of heredity in its evolutionary concepts is included.

§34 BIOLOGY OF REPRODUCTION (3) (Spring only)

Three lecture hours per week.

Aspects of the nature of sexuality. Life cycles of sex types will be related to genetic potentials of plant and animal types. The hormonal and nervous control will be utilized to characterize reproduction.

§35 NATURAL HISTORY OF DISEASES (3) (Fall only)

Three hours per week.

A course dealing with diseases of the human organism and the scientists who have been prominent in their control. Viruses, bacteria, protozoa and fungi will be covered.

§36 EVOLUTION, PAST AND PRESENT (3)

Three lecture hours per week.

A study of the theory of evolution, inorganic, organic, and psychobiological. Darwin's world and the theory of Natural Selection will be examined. Selected examples of adaptation will be presented in combination with man's biological and cultural evolution.

***37 DEVELOPMENT OF BIOLOGICAL CONCEPTS (3) (Spring only)**

Three hours per week.

Prerequisites: Twelve or more units of college work and an overall "C" average or better. One course in Life Science is recommended.

Description of the beginnings, growth and development of science in the ancient cultures, scientific thought through Greek and Mediterranean cultures, scientific decay during the Dark Ages, rebirth of science during the Renaissance, historical foundations of modern biology and modern biological themes.

***38 NATURAL SCIENCES (3) (Fall only)**

Prerequisites: One 10 Level course in Physical Science, or Biology 1 or Biology 2.

An inter-disciplinary course drawing from the areas of life and physical sciences. Lectures, seminars and discussions will deal with current problems in science and their impact on contemporary society.

This course may be taken as either Biology 38 or Physical Sciences 38 for required credit in Natural Sciences.

***40 NATURE STUDY (3) (Spring only)**

One hour of lecture and two three-hour lab periods per week, with day and week-end field trips. See instructor for dates.

Prerequisite: Sophomore standing (24 units) with one course in the Biological Sciences or consent of the instructor.

Lecture, laboratory and field study of selected common organisms, both plant and animal; natural history and distribution of Bay Area organisms. Course designed to meet requirements of Education majors.

***41 ANATOMY AND PHYSIOLOGY (5) (Fall only)**

Three lecture hours and two three-hour lab periods per week.

(Required for A.A.R.N. Program.)

Previous course in Biological Science recommended.

A detailed survey of basic human anatomy and of the principles of physiology. Emphasis is placed upon those areas which have a direct correlation with the practice of nursing.

***42 MICROBIOLOGY (4) (Spring only)**

Two lecture hours and six lab hours per week.

Required for A.A. Degree Nursing Program. Others require consent of instructor.

Basic concepts of the structure and function of micro-organisms, especially as related to the host-parasite relationship. Control and prevention of the infectious diseases of man.

***48 TOPICS IN BIOLOGY (1-3)**

Three lecture hours per week.

The topic of this course will be different each semester. It is intended to be a course covering a subject of relevance, but not intended to be a permanent offering of the Division.

***49 SPECIAL PROBLEMS (1 or 2)**

Hours by arrangement.

Prerequisites: Open only to students who have completed, or are currently enrolled in one of the following: Biology 2, 20, 21 or 22. Permission of the advising instructor is required.

*Day only.

A problem is chosen by the student in order to lay a foundation for future research in one of the fields of Biological Science. The problem is developed into a regular scientific report.

***52 VOCATIONAL NURSING BACTERIOLOGY (2)**

Two lecture hours per week.

Prerequisite: Enrollment in the Licensed Vocational Nursing Program. Recommended for Medical Assistants with consent of instructor.

Introduction to microbiology with emphasis upon detection, morphology, physiology, transmission and control of pathogenic forms.

53 BODY STRUCTURE AND FUNCTION (2)

Two hours of lecture per week.

Covers the normal body structure and function of the following systems: skeletal, muscular, circulatory, digestive, endocrine, respiratory and nervous. The anatomy of the special sense organs, the eye and ear, is also covered.

Designed to meet the requirements of the Vocational Nurse Program and for students majoring in Medical Assisting. This course is integrated with the course in Medical and Surgical Nursing.

**Building Inspection
Certificate Program**

A Certificate in Building Inspection is awarded by the College of San Mateo upon completion of 24 units of specified course work. For complete details, consult the Building Inspection brochure available at the Information Center in the Administration Building.

Business and Data Processing

Some of these courses are transferable to the State colleges; however, they are principally designed to prepare the student for employment.

Students graduating with a major in the field of business must meet the following subject requirements:

Mathematics—A percentile rating of 35 or over on the quantitative part of the SCAT entrance examination or completion of Bus. 50 with a grade of C or better. It is recommended that Bus. 50 be completed by the end of the second semester.

Bus. 10—Introduction to Business.

10 INTRODUCTION TO BUSINESS (3)

(Required of all students majoring in Terminal Business Programs.)

Satisfies requirement for Mgmt. 99 for Management Certificate Program.

Three class hours per week.

An introductory survey of the nature, organization and structure of the American free enterprise system. A basic orientation course in business designed to develop a realization of the role of business in the economy and as an aid in selecting a field of vocational specialization.

35 PERSONAL AND FAMILY FINANCE (3)

Three class hours per week.

Develops understanding and skill in dealing with family and personal finance problems. Topics include: financial planning, borrowing money, insurance, introduction to investments, estate planning, real estate and taxes.

*49 SPECIAL STUDY PROJECTS (1 or 2)

Hours by arrangement.

Prerequisites: Sophomore standing and permission of the Chairman of the Business Division.

Designed to provide an opportunity for a student to extend his knowledge and understanding of a selected topic or problem beyond the scope of other courses. The nature and topic of assignment will be prescribed by the instructor.

50 BUSINESS ARITHMETIC (3)

Three class hours per week.

Prerequisite: For students with a percentile rating below 35 on the quantitative part of SCAT entrance examination. (See Business Division requirement for business mathematics.) There will be a mathematics inventory test for Evening College students given at first meeting of class to determine placement for either Bus. 50 or 51.

Fundamental arithmetic operations including fractions, decimals and percentages used in ordinary problems of business.

51 BUSINESS MATHEMATICS (3)

Three class hours per week.

Prerequisite: A percentile rating of 35 or over on the quantitative part of the SCAT entrance examination or completion of Bus. 50 with a grade of C or better. Placement in Bus. 50 or 51 is on the basis of score on inventory test given to Evening College students at the first class meeting.

Finding required quantity by use of fractional equivalents, aliquot parts, equations and formulas, ratio and proportion, formulas in percentage, simple interest, bank discount, present value, periodic payments and depreciation.

§52 LAW FOR THE LAYMAN (3)

Three class hours per week.

*Day only.

§Evening only.

A survey of legal problems which confront people in their everyday life activities. Included are the courts, trials, marriage and divorce, community property, wills, trusts, succession, mortgages, trust deeds, conditional sales, crimes, torts, homesteads, the Corporate Securities Act, the Workmen's Compensation Act and many other principles of general law.

*56 BUSINESS CORRESPONDENCE (3)

Three class hours per week.

Prerequisite: Bus. 92a—Typing, or equivalent.

Business letter writing taught by the workshop method. Students form their own companies and carry on the correspondence necessary to complete the business transactions.

*57 MEDICAL TERMINOLOGY, CORRESPONDENCE AND REPORTS (3)

Three class hours per week.

Prerequisite: One semester of college English.

Development of a medical vocabulary through the study of the principles of word construction and word analysis with emphasis on spelling and pronunciation. Medical abbreviations and symbols are included. Familiarization with records, reports and correspondence used in the medical profession.

58 HUMAN RELATIONS (3)

Three class hours plus one lab hour by arrangement per week.

The application of psychological principles to problems of self-management and personal growth essential for successful living, including interpersonal relationships on the job.

59 INTRODUCTION TO MEDICAL OFFICE TRAINING (3)

Three class hours per week.

Familiarization with duties and responsibilities of a medical assistant in a physician's office, clinic, hospital or other medical facility. Emphasis on desirable personality traits and human relationships as well as on medical ethics, specialties in the medical field and office maintenance. Introduction to medical records, filing, billing, insurance, bookkeeping procedures and clinical duties commonly performed by a medical assistant.

65 SMALL BUSINESS MANAGEMENT (3)

Three class hours per week.

Prerequisite: Bus. 10 or permission of the instructor.

Examination of the opportunities and hazards of small business operation; designed for business students who plan to establish or supervise a small business. Significant areas of

vital interest to the prospective independent businessman are explored, including type of operation, legal form, site location, financing, handling of personnel and overall management procedures.

66 GENERAL ACCOUNTING (4)

Five class hours plus one lab hour per week.

Recommended: Completion of or concurrent enrollment in Bus. 50 or 51.

Application of accounting procedures for a small business using general and special journals, general ledger, subsidiary ledgers, petty cash records and payroll records for cash or accrual basis. Preparation of trail balances, work sheets, adjusting and closing entries, and financial statements.

§69 INCOME TAX ACCOUNTING (3)

Three class hours per week.

Prerequisites: Bus. 66, Bus. 1a, or permission of the instructor.

A study of the procedures for computing the income tax liability of individuals and business in accordance with the latest income tax law and regulations. Practice in solving typical problems and in preparation of tax returns.

70a PRINCIPLES OF TRANSPORTATION (3)

Three class hours per week.

Transportation in our economy, the transportation system with emphasis on rail, air, water, motor and pipeline. Development and regulation of the various modes of transportation, theory of rate-making and government controls, selected carrier problems and transportation policies.

70b TRAFFIC MANAGEMENT AND PHYSICAL DISTRIBUTION (3)

Three class hours per week.

Prerequisite: Bus. 70a or concurrent enrollment in 70a.

Emphasis on management of physical distribution including the total cost concept, planning and coordinating the functions of transportation, storage, packaging, handling, inventory and location theory.

§72 AIR PASSENGER AND CARGO TRANSPORTATION (3)

Three class hours per week.

Passenger originations and destinations in the United States; growth and development of air passenger traffic; Federal control of air lines; airport system of the U.S.; domestic and international operations of U.S. air lines.

§80a FUNDAMENTALS OF LIFE AND HEALTH INSURANCE (3)

Three class hours per week.

§Evening only.

Economic uses of life insurance and annuities. Types of contracts. The arithmetic of premiums and reserves. Introduction to health insurance. Company operations. Settlement options and programming.

Commences preparation for CLU Examination, Part I.

§80b FUNDAMENTALS OF LIFE AND HEALTH INSURANCE (3)

Three class hours per week.

Prerequisite: Completion of Bus. 80a, or permission of instructor.

Continuation of CLU, Part I. Discussion of life insurance, settlement options, social security, government programs, programming and taxation. Also covered are life and health insurance company operations in regard to risk selection, organization, regulating, investment, policies.

When the student has completed Bus. 80a and Bus. 80b, he has had preparation to pass the CLU Examination, Part I.

81 SECURITY INVESTMENTS (3)

Three class hours per week.

Prerequisite: Second year students or consent of instructor.

Stocks, bonds and investment trusts; investment policies, evaluation, charting—issues and industries.

82a PRINCIPLES OF INSURANCE (3)

Three class hours per week.

Covers each type of insurance with the fundamental underlying principles, the organization of insurance business and accepted insurance practices.

Designed for all majors in Business who seek to pass the state examination for insurance salesmen, as well as the general student.

§82b PROPERTY AND CASUALTY INSURANCE (3)

Three class hours per week.

Prerequisite: Bus. 82a.

Analysis of fire insurance contracts and forms; protection of mortgagee's interest; consequential loss; fire insurance rating and engineering; ocean marine and inland marine insurance—nationwide definition, bailees' customers, contractors; equipment, transportation and inland blocks.

Qualifies for Insurance Institute of America's National Examination for Part "B."

§82C LIFE AND HEALTH INSURANCE (3)

Three class hours per week.

Prerequisites: Bus. 82a, 82b or consent of instructor.

Investigation of life and health insurance fundamentals. Analysis of the different types of policies, including group and industrial plans. Discussion of law and taxation affecting life and health insurance. Use of insurance in financial planning, estate planning, business.

83a-83b REAL ESTATE PRINCIPLES (Basic and Advanced) (3-4)

83a—Three class hours per week; 83b—Four class hours per week.

Prerequisites: 83a—None. Concurrent registration in Bus. 50 or 51 and 84 is recommended. 83b—Bus. 83a and Bus. 84, or Real Estate Salesman's or Broker's License or consent of instructor.

83a—Property, contracts, agency, listing and deposit receipts, real estate financing, mortgages and deeds of trust, agreements of sale, deeds, acknowledgement, recordation, liens and encumbrances, taxes, homesteads, escrows and title insurance, land description, real estate mathematics, California real estate law.

Assists toward basic license preparation.

83b—Problem assignments as they relate to types of contracts used in the real estate profession, financing aspects, deeds and conveyances, liens, principles of agency, legal aspects, the escrow procedure, leasing of properties and real estate mathematics.

Assists toward Salesman's and Broker's License preparation. Approved by Division of Real Estate as substitute for Bus. 85 toward Broker's examination qualification. Both courses may apply toward Real Estate Certificate.

83c REAL ESTATE MATHEMATICS (1)

One class hour per week.

Prerequisite: Concurrent enrollment in Bus. 83b.

A comprehensive review of the type of mathematical problems given in the state examination for a Broker's or Salesman's license.

This course is not intended as a substitute for Bus. 140—Real Estate Mathematics.

84 REAL ESTATE VALUATION, INVESTMENT AND MANAGEMENT (3)

Three class hours per week.

Prerequisite: None. Concurrent registration in Bus. 83a recommended.

Growth and development of California. Basic real estate principles, measuring changing value of money, the real estate cycle. Estimating: costs, depreciation, taxes, maintenance and insurance, interest costs, return on investment. Leases and property management, percentage and ground leases, selecting tenants. Accounting: rules—capital gains

and losses, accelerated methods of calculating depreciation charges.

Personal use and License preparation.

§85 REAL ESTATE PRACTICE (3)

Three class hours per week.

Prerequisite: Salesman's or broker's license, or completion of Bus. 83a and 84.

A comprehensive presentation of the techniques of operating a real estate business in the State of California with emphasis on the daily activities of salesmen and brokers.

Meets the state requirements for the broker's examination.

§87 LEGAL ASPECTS OF REAL ESTATE (3)

Prerequisite: Salesman's or broker's license, or completion of Bus. 83a and 84; or completion of Bus. 85.

The practice of real estate brokerage, real estate sales, property management, real estate ownership, the management or the building of an estate, and related topics along with a study of the facts and principles of California Real Estate Law.

Meets the state requirements for the broker's examination.

§88 REAL ESTATE FINANCE (3)

Prerequisite: Salesman's or broker's license, or completion of Bus. 83a and 84; or completion of Bus. 85.

Practices, customs and laws relating to mortgage lending and the financing of real estate, with emphasis on financing private houses.

90a BEGINNING SHORTHAND (5)

Five class hours and one lab hour by arrangement per week.

Prerequisites: Enrollment in or completion of Bus. 92a or equivalent and completion of or enrollment in Business 91, or one course in college English. Open only to students with no previous training in shorthand.

Foundation course in Gregg Shorthand Diamond Jubilee principles—theory, dictation and transcription.

90b INTERMEDIATE SHORTHAND (4 or 7)

Ten class hours and one lab hour by arrangement per week for 7 units.

Six class hours and one lab hour by arrangement per week for 4 units.

Prerequisites: Bus. 90a or its equivalent and completion of or enrollment in Bus. 92b or equivalent; completion of or enrollment in Bus. 91 or one course in college English.

Training in vocational application of shorthand through intensive dictation and transcription with emphasis on the integration of specific secretarial skills.

Designed for students with previous transcription training but insufficient skill to qualify for Bus. 90c. 90b is offered as a two-semester course in evening classes. 90bx meets for 5 hours for the first semester.

90c ADVANCED SHORTHAND (4-5)

Six class hours and one lab hour per week.

Prerequisites: Bus. 90b or its equivalent and completion of or enrollment in Bus. 91 or one college English course.

Intensive training in the vocational application of specific secretarial skills with emphasis on practical experience. One unit may be earned by office work by arrangement.

90L LEGAL SHORTHAND AND TRANSCRIPTION (2)

Four class hours per week.

Prerequisites: Completion of Bus. 92b, 90c and completion of or enrollment in one college English course. Concurrent enrollment in Bus. 100L

Intensive dictation and transcription of legal correspondence, records and documents. Emphasis on shorthand speed, transcription accuracy and development of legal terminology commonly used in law offices.

90M MEDICAL DICTATION AND TRANSCRIPTION (2)

Four class hours per week.

Prerequisites: Bus. 57, completion of Bus. 92b and 90b or equivalent; completion of or enrollment in one college English course.

Dictation and transcription of medical case histories, correspondence and reports.

90P ALPHABETIC SHORTHAND (4)

Five class hours per week.

Prerequisites: Completion of or enrollment in one college English course or in Bus. 91; completion of or enrollment in one typewriting course.

Foundation course in alphabetic shorthand—principles, dictation, transcription. Vocational or personal use.

90r REFRESHER SHORTHAND (3)

Three class hours per week and one lab hour per week by arrangement.

Prerequisites: Enrollment in or completion of Bus. 91 or one college English course.

For students with insufficient training in shorthand to qualify for Bus. 90b.

91 BUSINESS ENGLISH (3)

Three class hours per week.

Grammar, punctuation, spelling, word usage, vocabulary building, use of dictionary and references for secretarial and clerical majors.

92a BEGINNING TYPING (3)

Five class hours per week.

Prerequisite: No previous typing instruction.

An elementary course designed to develop correct typing techniques, basic skill in the operation of the typewriter.

92b INTERMEDIATE TYPING (3)

Five class hours per week.

Prerequisite: Bus. 92a with a grade of C or better or an equivalent proficiency in typewriting.

An intermediate course designed to increase speed and accuracy of typing and improve production rate of typing a variety of business problems.

92c TYPING (3)

Five class hours per week.

Prerequisite: Bus. 92b with a grade of C or better, or satisfactory completion of two years of typing in high school.

Mailable production typing with emphasis on speed and accuracy in the preparation of business and legal letters and forms, including financial, medical, legal and executive problems.

92r REFRESHER TYPING (3)

Five class hours per week.

Prerequisite: For students with insufficient training in typing to qualify for Bus. 92b.

Review of keyboard and correct techniques with emphasis on skill development; introduction to reports and business letters, forms and problems.

93 MACHINE CALCULATION (3)

Five class hours per week.

Prerequisite: Bus. 50, or permission of instructor.

Performance of arithmetic calculations on machines with special emphasis on actual business situations and problems. One-half of the semester will be devoted to the operation of key-driven calculators and one-half to rotary type calculators, and touch system of operating printing calculators.

100a OFFICE PROCEDURES (3)

Five class hours per week.

Prerequisites: Bus. 92b or an equivalent proficiency in typing; completion of or enrollment in Bus. 91, or permission of instructor.

Development of skill in the use of the proportional-space typewriter, transcription machines and duplicating machines; proficiency in records management and reproduction typing.

100b OFFICE PROCEDURES (3)

Five class hours per week.

Prerequisites: Completion of or enrollment in Bus. 91, or permission of instructor; Bus. 92b or equivalent, or Bus. 100a or equivalent.

Integration of training through simulated office experience with emphasis on techniques of administration.

100L LEGAL SECRETARIAL PROCEDURES AND OFFICE ADMINISTRATION (3)

Five class hours per week.

Prerequisites: Proficiency in related secretarial skills as follows: English—Completion of or enrollment in one College English course. Typing—Completion of Bus. 92b or its equivalent. Shorthand—Completion of Bus. 90c; Bus. 100a or equivalent; concurrent enrollment in Bus. 90L.

An intensive course in specialized procedures applicable to secretarial duties in law offices. General reference is made to legal duties per se; specific instruction in legal secretarial routines and documents operative in California.

***100M MEDICAL OFFICE PROCEDURES (3)**

Five class hours per week.

Prerequisites: Bus. 57, 59, 100a and enrollment in or completion of one course in college English.

Application of secretarial knowledge, skills and procedures to the medical office.

108a-108b OFFICE INTERNSHIP (3)

Prerequisites: Concurrent enrollment in Intermediate or Advanced Shorthand and/or a typing class or Bus. 100a and part-time employment (minimum of eight hours each week) in office work. Not open to first-semester students.

Seminar meets weekly. Speakers from business offices, discussions of individual and group job problems, field trips, special projects. Secretarial and clerical students have the opportunity to work under supervision of an experienced business teacher in adapting knowledge, skills and attitudes to office work.

108S OFFICE INTERNSHIP FOR SPECIALIZED SECRETARIES (3)

Two seminar hours and part-time employment in a specialized office.

Prerequisite: Completion of or enrollment in Bus. 100L or 100M.

On-the-job training for students who have completed the required preparatory courses in the Specialized Secretarial Curriculum—includes a two-hour weekly seminar and a minimum of eight hours per week employment in an office (legal or medical).

***109a-109b-109c MERCHANDISING INTERNSHIP (3)**

Class meets one day per week; sessions vary from two to four hours in length.

Prerequisites: Bus. 10; concurrent enrollment in one of the following: Bus. 110, Bus. 116, Bus. 118, Bus. 120 or Bus. 124 or by approval of the instructor; and part-time employment in the distributive field.

Designed for the terminal student majoring in Merchandising. Activities include: (1) Job-Problems Seminar—group discussion based on individual and group job problems, and (2) Laboratory Field Study—selected field trips.

110 FUNDAMENTALS OF SALESMANSHIP (3)

Three class hours per week.

Prerequisite: Bus. 10 is strongly recommended.

Covers the role and impact of personal selling in the marketing process of our business community. Considers principles and techniques employed effectively in the direct sales process. Includes sales demonstrations by guests from the direct selling field and practical sales presentations by students.

§111 FUNDAMENTALS OF REAL ESTATE SALESMANSHIP (2)

Two class hours per week.

Prerequisite: Salesman's or broker's license, or completion of 83a and 84.

Designed to assist newly licensed sales personnel to develop the specialized techniques required to promote an effective sales record. Coordinates the theoretical background required for State examinations into the area of property merchandising.

116 MERCHANDISING (3)

Three class hours per week.

Prerequisite: Bus. 10 and Bus. 50 (if required by test).

Retail processes emphasized include merchandise planning and control, buying and receiving, pricing, sales promotion and customer services.

120 ADVERTISING (3)

Three class hours per week.

Not open to first semester freshmen.

The role of advertising in our economic life with emphasis on advertising methods and media.

§123 PUBLIC RELATIONS (3)

Three class hours per week.

A practical course dealing with the role of public relations in business and industry. The course also covers the fundamental principles, procedures and tools used in public relations.

124 MARKETING (3)

Three class hours per week.

Prerequisite: Bus. 10 or Mgmt. 99 or consent of instructor.

A broad study of marketing principles and methods applicable to both consumer and industrial goods. Major topics include retailing and wholesaling consumers' goods, marketing industrial goods, marketing policies and practices, and government relationships to marketing.

§131 REAL ESTATE ECONOMICS (3)

Three class hours per week.

Prerequisite: Broker's license, or completion of five courses required for Real Estate certificate, or consent of instructor.

A practical study of the economic aspects of real estate designed to provide a grasp of the dynamic economic conditions and other factors underlying the real estate business.

§134 REAL ESTATE APPRAISAL (Basic) (3)

Three class hours per week.

Prerequisite: Completion of Bus. 83a and 84, or broker's license, or two years' full-time appraisal experience or consent of the instructor.

A first course in real estate appraisal; both residential and commercial properties are analyzed. Methods and techniques for determination of loan, market and insurance values.

§135 ADVANCED REAL ESTATE APPRAISAL (Urban) (3)

Three class hours per week.

Prerequisite: Satisfactory completion of Bus. 134, or broker's license, or two years' full-time appraisal experience.

A second and more advanced course in real estate appraisal of multi-family dwellings, apartment houses, commercial and special purpose property.

§136 ADVANCED REAL ESTATE APPRAISAL (Rural) (3)

Three class hours per week.

Prerequisite: Satisfactory completion of Bus. 134.

An advanced course in real estate appraisal of rural properties, covering three types: row crop, orchard, and livestock properties.

§138 REAL ESTATE EXCHANGES AND TAXATION (3)

Three class hours per week.

Prerequisite: Broker's license, or completion of five courses required for Real Estate certificate.

An advanced course for real estate brokers who have had a broad experience in residential, commercial, and urban land transactions. Primary emphasis is placed on developing and analyzing exchange transactions, the practical and technical aspects involved in completing such transactions, and the correlation of exchanges and tax matters which frequently constitute the prime reason for exchange.

§139 COMMERCIAL AND INVESTMENT PROPERTY (3)

Three class hours per week.

Prerequisite: Broker's license, or completion of five courses required for Real Estate certificate.

A course for licensed real estate brokers and salesmen, mortgage banking and trust department officials, and investors, emphasizing the process of selecting various types of commercial properties for investment purposes and analyzing locations, income, operating expenses, depreciation and obsolescence.

§140 REAL ESTATE MATHEMATICS (3)

Three class hours per week.

Designed to provide the student with a review of the fundamentals of mathematics as they apply to real estate practice, with problems in the area of amortization, appraising, broker's trust fund accounts, escrow, interest calculations and capitalization techniques.

§141 REAL ESTATE PROPERTY MANAGEMENT (3)

Three class hours per week.

Prerequisite: Bus. 85 or 87, or consent of instructor.

A practical, applied study of the management of income-producing real estate with particular emphasis on neighborhood analysis; rent schedules; management procedures; selection of personnel; contracts and purchasing; interior and exterior maintenance and repairs; leasing procedures, management problems and accounting and investment planning.

***142 REAL ESTATE INTERNSHIP (4)**

Two lecture hours and 10 laboratory hours per week.

Prerequisites: Business 83a and 84. Business 83b or 85 may be taken concurrently. A State Real Estate Salesman's License is desirable but not essential.

Supervised work experience and seminar. A practical application of skills and understandings learned in the academic classroom as applied to areas of specialization to be selected by the student. This is intended to assist the student enrolled in the work experience education program.

§Evening only.

*Day only.

§ 145a TITLE EXAMINING PROCEDURES (Basic) (3)

Three class hours per week.

Compiling and interpreting data from various official sources leading to the production of evidence of ownership of real estate.

§ 145b ESCROW PROCEDURES (Basic) (3)

Three class hours per week.

Prerequisite: Bus. 145a or equivalent experience approved by the instructor.

Methods and techniques of escrow procedures. Legal and ethical responsibilities of persons engaged in escrow work. Types of instruments used on the job, techniques required for their preparation, preparation of closing statements and disbursement of funds, proration calculations, public relations and service aspects of the industry.

§ 145c TITLE EXAMINING PROCEDURES (Advanced) (3)

Three class hours per week.

Prerequisite: Bus. 145a, or equivalent experience.

A comprehensive study of map reading, easements, and appurtenant easements. A study of abandonments, including vesting and effect of various types of abandonments. Procedure for examining court proceedings as they relate to divorce, probate, foreclosures, etc. Detailed studies of community and separate property problems.

Business Administration

Students graduating with a major in the field of Business Administration must meet the following requirement:

Mathematics—A percentile rating of 35 or over on the quantitative part of the SCAT entrance examination or its equivalent test score or completion of Bus. 50 with a grade of C or better. It is recommended that Bus. 50 be completed by the end of the second semester.

1a-1b PRINCIPLES OF ACCOUNTING (4-4)

Five class hours plus one lab hour per week.

Prerequisite: 1a—None. Completion of or concurrent enrollment in Bus. 50 or 51 is recommended. 1b—Bus. Adm. 1a or equivalent, with a grade of C or higher.

1a—Records, accounts and statements of proprietorship enterprises. Debit and credit theory and generally accepted accounting principles and concepts.

1b—Applications of theory, concepts and principles to partnerships and corporations. Introduction to departmental, cost and manufacturing accounting, budgeting, analysis and management decisions.

§Evening only.

18a COMMERCIAL LAW (3)

Three class hours per week.

Introduction to law applicable to business, including sources, agencies and procedures for enforcement. Emphasis on nature and function of law through case study analysis in fields of contracts, sales, agency and employer-employee relations.

18b COMMERCIAL LAW (3)

Three class hours per week.

Prerequisite: Bus. Adm. 18a.

Continuation of 18a with business applications of law of partnerships, corporations, real property, mortgages and security transactions, trusts, wills, bankruptcy and commercial paper.

18c GOVERNMENTAL REGULATORY POWER (3)

Three lecture hours per week.

Prerequisite: Enrollment in or completion of one college English course.

Legal environment of business. Evolution, trend and implication of government regulation of business and the economy. Includes discussion of sources of power within the government and constitutional limitations thereon, together with specific regulatory powers and their administration.

Chemistry

1a GENERAL CHEMISTRY (5)

Three lecture hours and two three-hour lab periods per week.

Prerequisites: High school chemistry with grade of C plus or better and two years of high school mathematics; high school physics recommended, or satisfactory performance on placement test.

Basic principles of atomic and molecular structure and bonding. Chemical reactions and equations, solutions, gas laws, equilibrium, stoichiometry and calculations related to the foregoing. Intended for students majoring in science fields and engineering.

1b GENERAL CHEMISTRY (5)

Three lecture hours and two three-hour lab periods per week.

Prerequisite: Chem. 1a with grade of C or better.

Includes descriptive chemistry of the elements and qualitative analysis. Introduction to nuclear chemistry and more detailed treatment of electrochemistry, equilibrium and kinetics than that in Chem. 1a.

5 QUANTITATIVE ANALYSIS (4)

Two one-hour lectures and two three-hour lab periods per week.

Prerequisite: Chem. 1b with a grade of C or better.

A study of the theory, calculations and practice of common analytical procedures. Includes gravimetric, volumetric methods; also colorimetric, potentiometric and other instrumental procedures.

Required of some students intending to continue in Chemistry, Medicine, Dentistry and some curricula in Agriculture.

***7 INTRODUCTION TO PHYSICAL CHEMISTRY (4)**

Three one-hour lectures and one three-hour lab period per week.

Prerequisites: Chem. 1a-1b, 5.

A study of the properties of matter, solutions, equilibrium, hydrogen ion concentration, thermochemistry and reaction velocity.

8 ELEMENTARY ORGANIC CHEMISTRY (3)

Three one-hour lectures per week.

Prerequisite: Chem. 1a (grade C or better) or Chem. 10 with permission of instructor. (Recommended for science related majors needing only one semester of organic chemistry.)

General scope and basic concepts of structure, behavior and mode of reaction of organic compounds, including instrumental techniques and reaction mechanisms.

9 INTRODUCTION TO ORGANIC CHEMISTRY LABORATORY (3)

Two three-hour lecture-lab periods per week.

Prerequisite: Concurrent enrollment in or completion of Chem. 8 or permission of the instructor.

Principles and practice of laboratory techniques, including methods of separation, purification, synthesis, kinetics, and identification of unknowns.

10 SURVEY OF CHEMISTRY (3)

Three lecture hours per week.

Not open to students who have had or are taking Chem. 1a.

A general survey of the more important concepts (and applications) of Chemistry for non-science majors.

***12a ORGANIC CHEMISTRY (6)**

Four lecture hours and two three-hour lab periods per week.

Prerequisite: Chem. 1a with a grade of C or better.

*Day only.

Similar to Chem. 8 and 9, but with additional emphasis on problem solving.

Recommended for students who plan to take a second semester of Organic Chemistry.

30a BASIC CHEMISTRY (4)

Three lecture hours and one three-hour lab period per week.

Prerequisite: High school Algebra or permission of instructor.

Aspects of chemistry of particular use to applied fields. Includes mole concept, aqueous solutions, acids and bases, major classes of organic compounds and reactions of biological importance.

Intended for students whose majors (nursing, home economics, industrial technology, forestry and police science) require a working knowledge of chemistry but do not require the theoretical background given in Chem. 1a-1b.

30b BASIC CHEMISTRY (4)

Three lecture hours and one three-hour lab period per week.

Prerequisite: Chem. 30a with a grade of C or better.

Includes gas laws, equation writing, oxidation reduction and further work in organic and biochemistry.

***49 SPECIAL PROJECTS (1-2)**

Hours by arrangement.

Prerequisites: Completion of Chem. 1a, sophomore standing and permission of the Physical Science Chairman.

51 LABORATORY PREPARATION FOR CHEMISTRY 1a (3)

Two three-hour lecture-lab periods per week.

Prerequisite: High school algebra.

Provides preparation for students who do not have the prerequisites for Chem. 1a. Includes chemical nomenclature and formula writing, and mathematical review, including logarithms and slide rule and exercises in calculations relating to chemistry.

Community Services Programs

The Community Services Program of the College of San Mateo offers a wide variety of lectures, workshops, forums, performances and non-credit courses.

For a complete listing of these activities, call the Information Office (574-6544). A brochure of the semester's activities will be mailed to you, upon request.

Cooperative Education

1 COOPERATIVE EDUCATION (3)

Cooperative Education endeavors to give the student practical work experience which can be either related or unrelated to his major. There are three basic programs:

The Parallel Program operates concurrently with the daily studies. Through a program of work and study, the relationship between theory and practical application is established.

The Alternate Semester Plan provides the student with full-time field experience for half a year. The second half of the year is spent in school.

The New Careers Plan provides evening students working full time a chance to relate theory and their on going work experience.

Further information is available in Building 1, Room 251 (phone: 574-6171).

Cosmetology

*50 COSMETOLOGY (14)

Five lecture hours and 27 lab hours per week, plus additional hours by arrangement for scheduled activities.

Prerequisite: Registration in Cosmetology Curriculum.

All subjects required for licensing as a Cosmetologist by the California State Board of Cosmetology; physiology and anatomy of the human body; histology of skin, hair and nails; hair tinting and bleaching, permanent waving, hair shaping and styling; care of skin and make-up; manicuring; sanitation and sterilization; shop management and salesmanship; cosmetic chemistry; electricity and care of electrical equipment.

*51 COSMETOLOGY (14)

Five lecture hours and 27 lab hours per week, plus additional hours by arrangement for scheduled activities.

Prerequisite: Grade of C or better in Cosmetology 50.

Continuation of Cosmetology 50.

*52 COSMETOLOGY (Brush-up) (10)

Five lecture hours and 27 lab hours per week.

Prerequisite: Cosmetology license.

For supplemental training requirements or out-of-state requirements. Consent of instructor prior to state examination required after completion of training.

*53 MANICURIST (10)

Five lecture hours and 27 lab hours per week.

*Day only.
§Evening only.

Prerequisite: Registration in Cosmetology curriculum.

Three hundred and fifty hours in training in theory and practice in the art of manicuring and pedicuring in preparation for licensure by the California State Board of Cosmetology, in that field only. Enrollment limited.

§90 ADVANCED WORKSHOP (1)

Three hours per week for nine weeks.

Prerequisite: California Cosmetologist's License.

Emphasis on current techniques in shaping, curl construction, styling and related salon practices. Hairpieces included.

Data Processing

(See also Math 25)

60 INTRODUCTION TO DATA PROCESSING (3)

Three hours of lecture per week.

Brief history of data processing; functional principles and capabilities of punched card and EDP equipment; flowcharting techniques applied to simple business applications; characteristics of computer storage, data representation, and arithmetic; symbolic programming concepts; basic principles of programming and operating systems.

61 PUNCHED CARD EQUIPMENT OPERATION AND WIRING (4)

Three hours of lecture and two hours of lab per week.

Prerequisite: Data Proc. 60 with a grade of C or better, or consent of the instructor.

Design of procedures, cards and forms for simple business problems; wiring and testing of control panels for the interpreter, reproducer, collator and accounting machine.

62 BASIC COMPUTER PROGRAMMING (4)

Three hours of lecture and three hours of lab per week.

Prerequisite: Data Proc. 60 with a grade of C or better, or consent of instructor.

The student will write and test programs and subroutines in assembler language, including input/output, arithmetic, logic and data movement operations to process sequential files.

63 RPG PROGRAMMING (3)

Three hours of lecture per week.

Prerequisite: Consent of the instructor.

The student will write Report Program Generator specifications to process typical business problems involving sequential files. Remote testing of student programs.

64a BASIC COBOL PROGRAMMING (3)

Three hours of lecture per week.

Prerequisite: Data Proc. 62 with a grade of C or better, or consent of the instructor.

Formats of the four COBOL divisions; file, record and item descriptions; ways of naming data-items; formats of the most commonly used procedural words. Students will compose programs to process sequential files; remote testing of student programs.

64b ADVANCED COBOL PROGRAMMING (3)

Three hours of lecture per week.

Prerequisite: Data Proc. 64a with a grade of C or better, or consent of the instructor.

Emphasis on writing efficient COBOL programs; use of advanced options of certain procedural words; organization and processing techniques used with random files. Student will compose programs to process sequential and random files; remote testing of student programs.

§65a BASIC SYSTEM 360 ASSEMBLER LANGUAGE PROGRAMMING (3)

Three hours of lecture per week.

Prerequisite: Data Proc. 62 with a grade of C or better, or consent of the instructor.

Design and organization of the IBM 360 computer system. Data formats; basic, commercial and scientific instruction sets. Physical input/output, supervisor state. Introduction to magnetic tape, disk and drum storage organization. Student will write and test simple programs in System 360 assembler language.

§65b ADVANCED SYSTEM 360 ASSEMBLER LANGUAGE PROGRAMMING (3)

Three hours of lecture per week.

Prerequisite: Data Proc. 65a with a grade of C or better, or consent of the instructor.

Student will write and test assembler language programs utilizing advanced programming methods for the IBM 360 computer system. Operating System and Disk Operating System functions; logical tape and disk input/output. Introduction to communications programming and multiprogramming.

§66 PL/1 PROGRAMMING (3)

Three hours of lecture per week.

Prerequisite: Data Proc. 64a or Math. 25 with a grade of C or better, or permission of the instructor.

A comprehensive course in the PL/1 language designed to develop fluency and accuracy in writing programs. The commercial subsets of PL/1 will be stressed. Scientific subsets

will be covered in less detail. All forms of input/output design will be covered. Student programs will be tested remotely.

§90 DATA PROCESSING FOR MANAGERS (3)

Three hours of lecture per week.

This course may not be taken in lieu of Data Proc. 60.

Brief discussion of punched card and computer hardware and flowcharting techniques. Feasibility studies, organization and staffing of the data processing department within a company. Typical applications of data processing equipment to business requirements; document, accounting, and systems controls and the audit trail; evaluating performance and planning for growth.

97 CARD PUNCH (3)

Six class hours per week.

Prerequisite: Consent of the instructor.

Program card design; discussion of features on IBM 024, 026 and 029 card punches; practice exercises involving typical business applications. Student will acquire a basic skill to prepare himself for employment as a card punch operator. Enrollment is limited to the number of machines available.

§106 DATA PROCESSING FIELD PROJECTS (2-4)

Hours by arrangement.

Prerequisite: Data Proc. 62 or consent of instructor.

Directed individual study arranged between the student and the instructor.

Dental Assisting (One Year Program)

***50 DENTAL ASSISTING (15)**

Nine lecture hours and 18 laboratory hours per week.

Anatomy and physiology of the head and oral cavity, operating room procedures, laboratory procedures, dental x-ray theory and techniques, dental office management, correlation of theory and laboratory experience in clinical practice in the clinical departments of the School of Dentistry, University of the Pacific, San Francisco and/or the School of Dentistry, University of California, San Francisco Medical Center.

***60 DENTAL ASSISTING (15)**

Nine lecture hours and 18 laboratory hours per week.

Prerequisite: Dental Assisting 50 with grade of C or better.

Continuation of Dental Assisting 50 with experience in more complex clinical areas.

§Evening only.

*Day only.

Drafting Technology

14 PRINCIPLES OF TECHNICAL DRAWING (3)

Two lecture and four lab hours per week.

Prerequisite: None. Open to all majors.

A basic mechanical drawing course with instruction surveying the field of graphic communications. Topics include visualization, geometric construction, dimensioning, fasteners, welding, electro-mechanical and architectural drafting principles. It is a one-semester standard college transfer course in mechanical drawing.

*51a-51b APPLIED DRAFTING MATHEMATICS (3-3)

Three one-hour lectures per week.

Prerequisite: Concurrent enrollment in D.T. 52a-b.

One of the required courses for Technical Drafting students, including review and instruction in basic arithmetic, elementary algebra, plane geometry, logarithms, use of the slide rule and practical plane trigonometry.

*52a-52b TECHNICAL DRAFTING (5-5)

Five three-hour periods per week.

Prerequisites: 52a—Concurrent enrollment in D.T. 51a. 52b—Concurrent enrollment in D.T. 51b; a grade of C or better in D.T. 52a, or consent of the instructor; and completion of D.T. 51a.

52a—Multi-view drawing, lettering, geometric shape description, sections, descriptive geometry, sketching, dimensioning, reproduction processes, charts and graphs.

52b—Working drawings, threads and fasteners, gears, tolerancing, pictorial projections, intersections, developments and assembly drawings.

*62a-62b ADVANCED TECHNICAL DRAFTING (5-5)

Five three-hour periods per week.

Prerequisite: A grade of C or better in D.T. 52a-b, or permission of instructor.

62a—Cams, assembly drawings, geometric tolerances, welding, jigs and fixture design, pneumatics, hydraulics and piping.

62b—Topographic drafting, production illustration, electrical and electronic drafting, structural drawing.

*63 BASIC TECHNICAL DESIGN (3)

Three lecture hours per week.

Prerequisites: Technology 72 and 74, concurrent enrollment in D.T. 62a.

*Day only.

§Evening only.

A required course of related instruction in the drafting program.

An application of the materials covered in Technology 72 and 74 to the solution of design problems. Designed to provide draftsmen with sufficient skills to make elementary design decisions. Considers the problems of producibility, value engineering and reliability. Includes numerically-controlled machines and programs.

EVENING CERTIFICATE PROGRAM

Upon completion of 24 semester units of drafting and related courses, a student may be awarded a Certificate in Industrial Drafting. For complete details, contact the Technician Division.

§102a-102b BASIC TECHNICAL DRAFTING (3-3)

Two hours of lecture and four hours of lab per week.

Prerequisites: 102a—None; 102b—D.T. 102a or D.T. 14.

Working drawings, shop processes, pictorial projections, intersections, developments and simplified drafting.

§112a TECHNICAL DRAFTING (3)

Two hours of lecture and four hours of lab per week.

Prerequisite: D.T. 102a or D.T. 14.

A course in fundamental skills in terms of projections, points, lines, planes, revolutions, intersections, surfaces and sheet metal practices.

§112b ADVANCED DRAFTING TECHNOLOGY (3)

Two hours of lecture and four hours of lab per week.

Prerequisites: D.T. 102a-b; 112a.

A course in fundamental skills taught in terms of gears and cams, with emphasis on calculations, drawings and terminology. Dimensioning, tolerancing, quality control and assembly and welding drawings and process.

§122a ELECTRONICS DRAFTING (3)

Two three-hour periods per week including two hours of lecture and four hours of lab.

Prerequisites: D.T. 14 or equivalent, Electronics 10 or equivalent training, or permission of instructor.

To teach the techniques of preparing the various types of electronic drawings used in industry.

§130a ELEMENTS OF MACHINE DESIGN (3)

One three-hour lecture session per week.

Prerequisite: D.T. 14, or knowledge of drafting fundamentals, Mathematics through Numerical Trigonometry, or permission of instructor.

To teach the techniques of selection and computations for machine elements and for design for compound machines.

Drama

Courses marked with an (x) are especially recommended for adults interested in effective use of leisure time.

*1a-1b HISTORY OF DRAMATIC ARTS (3-3)

1a—The evolution of drama from classical Greece to the 17th Century; physical theatres, playwriting, directing and staging. The principles underlying these arts will be related to dominant social, intellectual and artistic forces of the period.

1b—Evolution of the dramatic arts from the 17th Century to the present. Material presented in motion pictures, filmstrips, recordings, models and play attendance, as well as lectures and discussion.

*2a-2b DRAMATIC LITERATURE (3)

Three lecture hours per week.

Prerequisites: Drama 2a—None; 2b—Drama 2a.

The drama as an art form. Emphasis is on dramatic structure, traditional theories of dramatic form, types (comedy, tragedy, melodrama) and styles (realistic, expressionistic, romantic) of the plays. Drama 2a-2b will provide actors and directors with a large background of material from which they may successfully choose scenes for further study and development in other classes.

*10 INTRODUCTION TO THE THEATRE (3)

Three lecture hours per week.

Nomenclature, duties and responsibilities, traditions, script analysis, approach to a script from the director's viewpoint, the designer's viewpoint, the actor's viewpoint and the audience viewpoint. Discussions of publicity, performance, music and dance, motion picture and television.

*12a-12b STAGE PRODUCTION (3-3)

Two lecture hours and three lab hours per week.

Arts of the theatre. Lectures and laboratory sessions concerned with construction, painting and handling of scenery. Stage properties and effects. Woodworking methods as they apply to stage scenery. Rigging, construction and handling of "soft" scenery. Platforms, stairs and ramps. Materials and construction techniques for making "free" forms. Painting materials and techniques. Backstage organization. Making and remaking furniture.

*13 LIGHTING (3)

Two lecture hours and three lab hours per week, plus one crew assignment of approximately 50 hours.

*Day only.

Lectures and lab sessions concerned with lighting theatrical presentations. History of theatrical lighting. Theory of theatrical and display lighting. Study of various types of lighting equipment and accessories. Elements of electricity, color in light reflection, refraction and absorption, intensity control as these subjects relate to theatrical lighting. Theory and practice relating to the design and execution of lighting for theatrical presentations and displays.

*14a THEORY AND PRACTICE OF ACTING (3)

Four class hours per week.

Theories and techniques of acting and dramatic production, enacting and oral reading of scenes, tape recording, pantomimes and improvisations, vocal and physical exercises.

*14b-14c-14d ADVANCED ACTING AND FUNDAMENTALS OF DIRECTING (3-3-3)

Four class hours per week.

Prerequisite: Drama 14a or equivalent.

Review of basic principles and skills of acting, advanced theories and techniques.

*15 PLAY PRODUCTION (½ to 2)

Play rehearsals of seven weeks for each of four major productions per year, the first four weeks of which are from 3-6 p.m. daily and the last three weeks from 7-11 p.m. daily.

Prerequisite: Tryouts.

Problems of actual play production, acting.

May be repeated for credit.

*16 PRODUCTION SHOP (½ to 2)

Play rehearsals of seven weeks for each of four major productions per year, the first four weeks of which are from 1-5 p.m. daily and the last three weeks from 7-11 p.m. daily.

Problems of actual play production: lighting, management.

May be repeated for credit.

*17 (x) COSTUME-FASHION WORKSHOP (½ to 2)

Problems of actual play production, costumes, or makeup. This course will provide the costume and fashion students the opportunity for practical experience in design and execution of costumes for dramatic productions.

May be repeated for credit.

*20 DIRECTING (3)

Introduction to the theory and practice of play directing for theatre and screen. Analysis of plays to determine suitable acting, and staging styles and methods. Review of theories

and techniques of acting. Study of composition, movement, tempo, climax, and the use of sound and music. Preparation of play-production plans and promptbooks. Production of scenes or short plays for stage and television. Observations and analyses of plays in the theatre and on the screen.

***26 THEATRE GRAPHICS (3)**

Three lecture hours per week.

Graphic arts used in the theatre. A study of techniques used in scenic design including blueprinting, transparency preparation, watercolor and perspective. A survey of techniques used in painting and lighting scenery including pigments, colored light, detail painting and the use of aniline dyes. The analysis of specialized theatrical techniques involving silk-screening, program design, model making and projected scenery.

***27a-27b (x) STAGE DESIGN (3-3)**

See Art 27a-27b.

***49 SPECIAL PROJECTS (½ to 2)**

Hours by arrangement.

Prerequisite: Permission of the Fine Arts Division Chairman.

Economics

1a PRINCIPLES OF ECONOMICS (3)

Three hours per week for lectures and discussion.

The American economy; the price system; the role of resources, machines and men in production; the place of firms in organizing private business; the operation of the banking system and the use of money in guiding economic activity; the overall trends of National Income and factors in its determination; policies for stabilization and growth in advanced and under-developed nations.

1b PRINCIPLES OF ECONOMICS (3)

Three hours per week for lectures and discussion.

Prerequisite: Econ. 1a.

Supply, demand and price determination in a market economy; the business firm's costs, revenues and price policies under conditions of competition and monopoly; the determination of wages, rent, interest and profits; international trade and finance; taxes, debts and public finance; comparative economic systems of other nations.

2 ELEMENTARY STATISTICS (4)

Four class hours per week.

Prerequisite: Math 13.

*Day only.

Statistical theory and methods for measuring the variation and uncertainty inherent in the physical, social and economic environment. Emphasis is on the application of statistical tools for solving problems in business and the social sciences.

***10 SURVEY OF ECONOMIC PROBLEMS (3)**

Three hours of lecture per week.

Non-theoretical consideration of the major economic problems which confront the citizen today.

Students who have completed Econ. 1a or 1b will not receive credit for this course.

***11 ECONOMIC HISTORY OF THE UNITED STATES (3)**

Three class hours per week.

Prerequisite: None. Econ. 1a and 1b are recommended.

The origin and development of the American economy from colonial times to the present. Includes the basis for industrial growth, land and resource use, the transportation revolution, the development of money and banking machinery, changing trade patterns, the rise of organized labor, the economic role of government.

This course is identical to History 11.

***12 ECONOMIC HISTORY OF EUROPE (3)**

Three class hours per week.

Prerequisite: None. Econ. 1a and 1b are recommended.

The roots of modern economic society will be traced to their European origins. The rise of mercantilism, the market system, modern industrialism will be sketched against the ancient and medieval background. Attention will be given to 20th Century interwar and postwar developments, including recent movements toward European economic union.

This course is identical to History 12.

***13 CURRENT ECONOMIC AND SOCIAL PROBLEMS OF LATIN AMERICA (3)**

Three hours per week for lecture and discussion.

Prerequisite: Prior study of Latin American history or politics recommended but not required.

A review of historical and political background covering the indigenous cultures, colonial period and independence; followed by intensive study of specific country problems such as inflation, population, economic growth, agrarian reform, etc.

***15 PUBLIC FINANCE AND TAXATION (3)**

Three hours per week for lecture and discussion.

Prerequisite: Economics 1a and 1b.

The principal sources of government revenues and the expenditures of these revenues. Concerned with such economic problems as the shifting incidence of taxation and the relativity of fiscal problems to the business cycle and to political situations.

***49 SPECIAL PROJECTS (1-2)**

Hours by arrangement.

Prerequisites: Three units of Economics and permission of the Social Science Division Chairman.

Directed individual work in a specific field or topic. Evidence of accomplishment satisfying to the instructor is required.

Education

1 INTRODUCTION (3)

Three hours of lecture or discussion per week.

Designed primarily for those who wish to explore teaching as a possible career and secondarily for students interested in knowing more about American public education. The course considers career opportunities in education, the financial and legal aspects of teaching, the organization of the public school systems, teacher education and teacher certification. Emphasis is placed on career planning for careers in education.

2 THE TEACHER ASSISTANT (3)

Three lecture hours per week.

The role of the teacher assistant in the secondary and elementary school structure. Specific instruction and practice in the instructional, supervisory and clerical aspects of the assistant's position.

3 READING IN PUBLIC SCHOOLS (3)

Three lecture hours per week.

Brief history of reading, physiological and psychological basis of reading, philosophy of reading instruction, individual reading instruction, group reading instruction, coordination problems in reading instruction, acceleration problems in reading, multi-media approach in reading, teacher and teaching assistant variables in reading, facts and fallacies about reading readiness, review of research findings on reading instruction.

§4 CHILDREN'S LITERATURE, STORYTELLING (3)

Three lecture hours and six home preparation hours per week.

Designed to give laboratory experience in presenting stories and poetry to children in the kindergarten-primary grades and to acquaint the teacher-assistant, the teacher, the library

*Day only.

§Evening only.

aide, and the librarian with the history of literature for children and the outstanding authors and illustrators of children's books.

Electronics Technology

10 INTRODUCTION TO ELECTRONICS (3)

Three lecture hours per week. Open to all students except those who are currently enrolled in or have completed a college course in electronics.

A study of basic electronics with a descriptive presentation and a non-mathematical approach. The influence of electronics in all phases of business, science and daily life is stressed.

*50a, 50b, 50c ELECTRONIC CONSTRUCTION PROJECTS (1-1-1)

Three shop hours per week.

Prerequisites: Completion of E.T. 52, 52L, and M.T. 52, or consent of instructor.

Construction and test methods in producing electronic equipment which will meet modern standards in terms of efficiency, quality and appearance.

*52 ELECTRONIC PRINCIPLES AND PASSIVE NETWORKS (6)

Six lecture hours per week.

Prerequisites: One year of high school Algebra completed within the previous four years with a grade of C or better, or consent of the instructor. Concurrent enrollment in E.T. 52L.

Basic laws and principles of electronic behavior. The functions of resistance, inductance and capacitance are covered individually and collectively in electronic networks.

*52L ELECTRONIC PRINCIPLES LABORATORY (3)

Nine lab hours per week.

Prerequisite: Concurrent enrollment in E.T. 52.

Experiments and procedures which parallel the lecture material presented in E.T. 52. The use of basic electronic measuring equipment is stressed. A period of instruction in safety procedures is provided.

*53 ACTIVE DEVICES AND NETWORKS (6)

Six lecture hours per week.

Prerequisites: Successful completion of E.T. 52 and E.T. 52L with a grade of C or better or consent of the instructor. Concurrent enrollment in E.T. 53L.

Characteristics of various types of active devices utilized in electronic circuits.

***53L ACTIVE DEVICES LABORATORY (3)**

Nine lab hours per week.

Prerequisite: Concurrent enrollment in E.T. 53.

Experiments and procedures which parallel the lecture material presented in E.T. 53 through the use of sophisticated measuring equipment. Basic techniques of trouble-shooting.

***62 FUNCTIONAL ANALYSIS OF ELECTRONICS CIRCUITS (6)**

Six lecture hours per week.

Prerequisites: Successful completion of E.T. 53, E.T. 53L with a grade of C or better, or consent of the instructor. Concurrent enrollment in E.T. 62L is required.

A detailed study and analysis of linear and non-linear circuits. Typical circuits investigated are oscillators, multivibrators, amplifiers, gates and modulators.

***62L FUNCTIONAL ANALYSIS LABORATORY (3)**

Nine lab hours per week.

Prerequisite: Concurrent enrollment in E.T. 62.

Measure and evaluate electronic circuit responses to various types of input signals as discussed and developed in the lecture material.

63 FUNCTIONAL ANALYSIS OF ELECTRONIC EQUIPMENT (6)

Six lecture hours per week.

Prerequisites: Successful completion of E.T. 62, E.T. 62L with a grade of C or better. Concurrent enrollment in E.T. 63L is required.

A detailed study and analysis of industrial, digital and communications electronics equipment. The functional relationships of the various circuits which comprise electronic equipment in the instrument, transmitting, receiving and control area are presented.

***63L FUNCTIONAL ANALYSIS OF EQUIPMENT LABORATORY (2)**

Six lab hours per week.

Prerequisite: Concurrent enrollment in E.T. 63 is required.

Laboratory study of electronic equipment in which adjustments, calibration, testing, analyzing measurements and trouble-shooting are stressed.

***65 COMMERCIAL LICENSE (3)**

Three lecture hours per week.

*Day only.

§Evening only.

Prerequisites: E.T. 62, concurrent enrollment in E.T. 63, or consent of instructor.

Basic material covered will be that outlined by the Federal Communications Commission. The course will serve as a study guide for the first and second class radio telephone license.

§101 APPLIED ELECTRONIC MATHEMATICS (3)

Three lecture hours per week.

Prerequisite: Math. 11 taken during the previous year with a grade of C or better, or consent of instructor.

Basic applications of algebra to the solution of problems involving direct-current circuits, machines, radio-frequency transmission and distribution circuits; elements of trigonometry, logarithms, complex numbers and vector methods as applied to alternating current circuits and high-frequency transmission lines. All problems will be drawn from actual situations encountered in the field of electronics.

§102a-102b ELEMENTARY ELECTRONICS (4-4)

Three lecture and three laboratory hours per week.

Prerequisites: 102a—A grade of C or better in high school Algebra or equivalent ability; 102b—E.T. 102a, or consent of the instructor.

Study of fundamental electronic theory, components and instrumentation. The laboratory techniques are designed to experimentally verify theoretical work.

§104a-104b RADIO CODE AND AMATEUR LICENSE (2-2)

Three hours per week.

Prerequisites: 104a—None; 104b—E.T. 104a or equivalent.

Instruction in recognition of the various characters of the Morse Code. Practice in pencil copy of incoming tape material and in sending of the code to other students. Theory instruction pointed toward passing the written tests required by the FCC.

§105a-105b COMMERCIAL LICENSES (3-3)

Three lecture hours per week.

Prerequisite: 105a—None; 105b—105a or equivalent.

The basic material covered in this course will be that outlined by the FCC as a study guide for the examination for the first and second class radio-telephone licenses.

§122a-122b AMPLIFIER FUNDAMENTALS (4-4)

Three hours of lecture and three hours of laboratory per week.

Prerequisites: Satisfactory completion of E.T. 102a-b; 122b—E.T. 122a.

Fundamental theories of transistors, FETs and other active devices, and their applications in the fields of voltage and power amplification.

§ 132a-132b ELECTRONIC CIRCUITS (4-4)

Three lecture hours and three recitation hours per week.

Prerequisites: 132a—E.T. 122a; 132b—E.T. 132a, or consent of the instructor.

Fundamental design techniques will be used in the analysis of circuits in this laboratory-oriented, two-semester course. Power supplies, integrated circuit amplifiers, power amplifiers, RF amplifiers, sine wave oscillators, non-sine wave oscillators, AM-FM modulation and wave shaping circuits will be covered. Emphasis will be placed on measurements, trouble-shooting and the proper use of laboratory equipment.

§ 134a-134b COMPUTERS: THEORY AND CIRCUITRY (4-4)

Three lecture hours and three hours of laboratory per week.

Prerequisites: 134a—Satisfactory completion of E.T. 122a and 122b; 134b—E.T. 134a, or consent of the instructor.

A study in the basics of computer systems. Includes the fundamentals of Boolean algebra and logic circuits. Analogue and digital systems are covered and compared. The laboratory is used to expand the theoretical phases in terms of the use of various building blocks of the modern computer systems.

§ 142a-142b MICROWAVE TECHNIQUES (2-2)

Four hours per week.

Prerequisite: Related industrial or course experience.

A study of the instruments used in making measurements on microwave equipment and the laboratory measurements of frequency, impedances, standing wave ratios, reflections, absorption and power in coaxial wave-guide systems. The course will use the latest type of microwave generating and measuring equipment and will be mainly concerned with X-band microwave frequency.

§ 143a-143b MICROWAVE THEORY (3-3)

Three lecture hours per week.

Prerequisite: Related industrial or course experience.

The study of the generation of microwave signals produced by klystrons, magnetrons, backward wave oscillators and other types of microwave generators, and the instruments used to make quantitative measurements of frequency impedances, standing wave ratios, reflections, absorptions and power in wave-guide systems.

§Evening only.

*Day only.

§ 150a-150b TELEVISION SERVICING (4-4)

Three lecture and three lab hours per week.

Prerequisites: E.T. 102a, 102b, 122a, 122b.

Study of television, circuits, designs and equipment. Emphasis on repair, trouble-shooting and servicing of audio and video systems in black-white and color.

§ 155 MICROWAVE COMMUNICATIONS (3)

Three lecture hours per week.

Prerequisites: Related industrial or course experience, or permission of the instructor.

A study of the equipment and techniques used in the installation, adjustment and calibration of microwave communications systems. Theoretical orientation to the circuitry of microwave systems is provided.

Engineering

Students majoring in Engineering should refer to the two-year program outlined under "Suggested Curricula."

***1a-1b ENGINEERING MEASUREMENTS (PLANE SURVEYING) (3-3)**

Two lecture hours and three lab hours per week.

Prerequisite: 1a—Trigonometry or Math. 21; 1b—Engineering 1a.

1a—Theory of measurements with applications in surveying; measurement of distance, differential leveling, measurements of angles and directions; field astronomy; systematic and random errors, adjustment of observations.

1b—Route surveys, topographic surveys, earthwork, triangulation, U.S. public land surveys; theory of state plane coordinate systems, municipal surveys; introduction to photogrammetry; legal aspects of surveying.

***4 THE ENGINEERING PROFESSION (2)**

Two lecture hours per week.

An historical overview of the branches and functions of engineering, the engineering approach to problem analysis and solution, a preview of basic engineering sciences. Occasional lectures by practicing engineers to supplement classroom work.

***16-17 ELEMENTARY STATICS AND STRENGTH OF MATERIALS (3-3)**

Three lecture hours per week.

Prerequisites: 16—Concurrent enrollment in Math. 19 or 20; 17—satisfactory completion of Engin. 16.

16—Elementary statics; the analysis of forces and their effects on rigid body structures by both analytical and graphical methods. Includes development of the essential mathematics and use of the slide rule.

17—Elementary strength of materials; analysis of stresses and deformations caused by forces acting on simple structures; selection of beams, columns and joint configurations in the process of design.

(Identical to Arch. 16 and 17.)

***19 FUNDAMENTALS OF PHOTOGRAMMETRY (3)**

Two lecture hours and one three-hour laboratory period per week.

Prerequisites: Math. 21 and Engin. 1a or Engin. 90a.

Elements of photogrammetric optics; aerial cameras and accessories; flight planning; principles of radial-line plotting and planimetric mapping; stereoscopy and parallax; mosaics, stereoscopic plotting instruments; photo interpretation.

***20 DESCRIPTIVE GEOMETRY (2)**

Six lab hours per week.

Prerequisite: Math. 21. Recommended: one year of high school mechanical drawing.

Lectures and drafting-room work on fundamental principles of descriptive geometry and their application to engineering problems.

***22 ENGINEERING GRAPHICS (2)**

Six lab hours per week.

Prerequisite: Engr. 20; Math. 31 (may be taken concurrently).

Graphical mathematics, data representation, nomography and graphical calculus. Engineering sketches and working drawings. Introduction to engineering design principles and documentation by means of a student designed apparatus.

***35 STATICS (3)**

Three lecture hours per week.

Prerequisite: Math. 31. Recommended: Engin. 20.

Plane and space force systems; vector algebra, equilibrium problems covering structures, machines, distributed force systems, friction, moments of inertia and virtual work.

***38 CIRCUITS AND DEVICES (3)**

Three one-hour lectures per week.

Prerequisite: Math. 32 and Physics 4b, which may be taken concurrently.

Introduction to circuits, natural and forced response, network theorems; characteristics and circuit models of electronic devices, and transistor amplifiers.

*Day only.

***45 PROPERTIES OF MATERIALS (3)**

Two lecture hours and three lab hours per week.

Prerequisite: Math. 31 and Chem., 1a. Recommended: Physics 4a.

Introduction to mechanics of solids, atomic and crystal structure of materials. chemical and physical properties, phases and microstructures, solid state transformations, mechanical and thermal treatment of alloys. Structure and properties of semiconductors, aggregate materials and high polymers.

***49 ENGINEERING PROJECTS (1-2)**

Hours by arrangement.

Prerequisites: Sophomore standing and permission of instructor.

Directed individual study of a suitable topic and/or the construction of models useful in the study of engineering.

90a-90b ELEMENTS OF SURVEYING (3-3)

Two lecture hours and one three-hour lab period per week.

Prerequisites: 90a—High school-level Mathematics through Plane Geometry; 90b—Satisfactory completion of Engin. 90a.

90a—Use, adjustment and care of surveying instruments; basic surveying measurements of distances, elevations, angles and directions; principles and methods for planning and conducting land surveys.

90b—Practical applications of the basic principles of Engin. 90a, including location and construction surveys, boundary surveys, determination of meridian, and introductions to public land surveys, state plane coordinate systems and industrial applications.

(Identical to Tech. 90a-90b.)

English

The Freshman English Program

The freshman English program consists of transfer and non-transfer courses in composition, literature, language, and speech. Entering students enroll first in one of the following courses in composition:

Transfer Courses

English 10 or
English 11

Non-Transfer Courses

English 60 or
English 61

1971-1972

The freshman English requirement may be completed by additional three units chosen from the following courses:

Transfer Courses

English 12a
English 12b
English 12c
English 12d
English 13
English 14
Speech 1a

Non-Transfer Courses

English 62a
English 62b
English 62c
English 62d
English 63
English 65
English 67
Speech 62

Note that English 10 or English 11 is the prerequisite for English 12a, 12b, 12c, 12d, 13 and 14. English 60 or 61 is the prerequisite for English 62a, 62b, 62c, 62d, 63 and 65. English 67 (Reading Laboratory—1 unit) may be taken concurrently with any of the other courses in the freshman English program.

10 TECHNIQUES OF EXPOSITION (3)

Three class hours per week.

Practice in writing based on a study of the form and content of the essay.

11 TECHNIQUES OF INTERPRETATION (3)

Three class hours per week.

Practice in writing based on a study of significant essays, poetry, fiction, drama, song lyrics, films, etc.

60 BASIC TECHNIQUES OF EXPOSITION (3)

Three class hours per week.

Practice in reading and writing brief, clear, effective essays.

61 BASIC TECHNIQUES OF INTERPRETATION (3)

Three class hours per week.

Practice in reading and writing based on a study of essays, poetry, fiction, drama, song lyrics, films, etc.

12a INTRODUCTION TO LITERATURE: MAJOR TYPES (3)

Three class hours per week.

Prerequisite: English 10 or 11.

The study of literary types: fiction, drama, and poetry. Reading, analysis and discussion of selected works; written reports; oral readings; lectures.

12b INTRODUCTION TO LITERATURE: POETRY (3)

Three class hours per week.

Prerequisite: English 10 or 11.

The study of poetry. Reading, analysis and discussion of selected works; written reports; oral readings; lectures.

12c INTRODUCTION TO LITERATURE: FICTION (3)

Three class hours per week.

Prerequisite: English 10 or 11.

The study of the short story and novel. Reading, analysis, and discussion of selected works; written reports; oral readings; lectures.

12d INTRODUCTION TO LITERATURE: DRAMA (3)

Three class hours per week.

Prerequisite: English 10 or 11.

The study of drama. Reading, analysis, and discussion of selected works; written reports; oral readings; lectures.

62a BASIC INTRODUCTION TO LITERATURE: MAJOR TYPES (3)

Three class hours per week.

Prerequisite: English 60 or 61.

The study of fiction, drama, and poetry. Reading, class discussion; oral readings; lectures; written reports.

62b BASIC INTRODUCTION TO LITERATURE: POETRY (3)

Three class hours per week.

Prerequisite: English 60 or 61.

The study of poetry. Reading, class discussion; oral readings; lectures; written reports.

62c BASIC INTRODUCTION TO LITERATURE: FICTION (3)

Three class hours per week.

Prerequisite: English 60 or 61.

The study of the short story and novel. Reading, class discussion; oral readings; lectures; written reports.

62d BASIC INTRODUCTION TO LITERATURE: DRAMA (3)

Three hours per week.

Prerequisite: English 10 or 11.

The study of drama. Reading, class discussion; oral readings; lectures; written reports.

13 SEMANTICS (3)

Three class hours per week.

Prerequisite: English 10 or 11.

A vocabulary course including principles of semantics; some specific topics covered: etymology, dialects, roots, combining forms.

14 STRUCTURE OF THE ENGLISH LANGUAGE (3)

Three class hours per week.

Prerequisite: English 10 or 11.

The study of historical changes in language from the view of the traditional and modern grammatical systems, including an analysis of linguistic concepts.

***63 VOCABULARY STUDY (3)**

Three class hours per week.

To increase and improve the student's word stock; frequent assignments in the use of the dictionary; emphasis on contemporary usage and practical application of vocabulary skills in the mastery of other subjects.

65 ENGLISH GRAMMAR (3)

Three class hours per week.

The study of basic grammar, including such topics as sentence structure, diction, agreement, punctuation, and troublesome verbs.

OTHER TRANSFER COURSES

2 ADVANCED COMPOSITION (3)

Three class hours per week.

Prerequisites: English 10 or 11 and an English 12 course.

Practice in writing research and critical papers based upon extensive and intensive reading of literature and related critical works.

9a-9b CREATIVE WRITING (2-2)

Two class hours per week.

Prerequisites: 9a—An English 12 course or permission of the instructor; 9b—English 9a.

The craft of writing short stories, sketches and poetry. In the Spring Semester, members of the class may contribute to the College of San Mateo annual magazine, "Vintage."

20 MYTHOLOGY AND FOLKLORE (3)

Three class hours per week.

Prerequisite: An English 23 course or permission of the instructor.

An introductory survey of myth and folklore, with emphasis on the classical myths.

21 THE SHORT STORY (2)

Two class hours per week.

Prerequisite: An English 12 course or permission of the instructor.

Study of short stories. Class discussion and reports; lectures.

22 THE BIBLE AS LITERATURE (3)

Three class hours per week.

Prerequisite: An English 12 course or permission of the instructor.

Study of the significant writings of the Old and New Testaments and of the Apocrypha.

23 INTRODUCTION TO POETRY (3)

Three class hours per week.

Prerequisite: An English 12 course or permission of the instructor.

Lectures concerning the various elements of and approaches to poetry. Intensive and extensive reading, discussion, critical papers.

24 MODERN DRAMA (3)

Three class hours per week.

Prerequisite: An English 12 course or permission of the instructor.

Study, from a theatrical as well as a literary point of view, of the outstanding masterpieces of the modern theatre. Lectures; discussion; recordings by professional actors.

25 INTRODUCTION TO SHAKESPEARE (3)

Three class hours per week.

Prerequisite: An English 12 course or permission of the instructor.

Emphasis upon Shakespeare's poetic and dramatic growth as a writer through a study of representative plays and poems. Reading, discussion, critical papers.

26 MODERN NOVEL (3)

Three class hours per week.

Prerequisite: An English 12 course or permission of the instructor.

Study of novels of the late 19th and 20th Century and of various aspects of literary criticism. Reading, discussion and critical papers.

27 CONTEMPORARY LITERATURE (3)

Three class hours per week.

Prerequisite: An English 12 course or permission of the instructor.

A study of selected fiction, poetry and drama of the 20th Century. Lectures, discussions, related reading, writing of critical papers.

*Day only.

***30 MAJOR FIGURES IN AMERICAN LITERATURE (3)**

Three class hours per week.

Prerequisite: An English 12 course or permission of the instructor.

Study of the writings of some of the major figures in American literature. Intensive reading, lectures, discussion, papers. May be repeated for credit.

***31a AMERICAN LITERATURE (3)**

Three class hours per week.

Prerequisite: An English 12 course or permission of the instructor.

Study of American literature from the beginning through Mark Twain. Lectures; reading, analysis and discussion of selected works; papers.

***31b AMERICAN LITERATURE (3)**

Three class hours per week.

Prerequisite: An English 12 course or permission of the instructor.

Study of American literature since Mark Twain. Lectures; reading, analysis and discussion of selected works; papers.

***42a MASTERPIECES OF EUROPEAN LITERATURE (3)**

Three class hours per week.

Prerequisite: An English 12 course or permission of the instructor.

Study of various works of European literature from the classical period to the 17th Century. Reading, analysis and discussion of selected works; written reports; lectures.

***42b MASTERPIECES OF EUROPEAN LITERATURE (3)**

Three class hours per week.

Prerequisite: An English 12 course or permission of the instructor.

Study of various works of European literature from the 17th Century to the present day, with emphasis on European prose writings. Readings, analysis and discussion of selected works; written reports, oral readings and lectures.

***43 AFRO-AMERICAN LITERATURE(3)**

Three class hours per week.

Prerequisite: An English 12 course or permission of the instructor.

A comprehensive survey of Afro-American letters in the United States from 1619 to the present.

*Day only.

***46a SURVEY OF ENGLISH LITERATURE (3)**

Three class hours per week.

Prerequisite: An English 12 course or permission of the instructor.

Study of the typical works of major English writers from Chaucer to the end of the 18th Century. Lectures, discussions, recordings.

Recommended for English majors.

***46b SURVEY OF ENGLISH LITERATURE (3)**

Three class hours per week.

Prerequisite: An English 12 course or permission of the instructor.

Study of the typical works of major English writers of the 19th and 20th Centuries, lectures, discussions, recordings.

§48 CONTEMPORARY VIEW OF ELIZABETHAN ENGLAND (3)

Six evening lectures (1 unit) and one month's travel and lectures in England (2 units).

Lectures, reading and discussion concerning the politics and social structure of Elizabethan England and of the concept of humanism. Study of three Shakespearean plays and attendance at plays in England. Written evaluation by students.

***49 SPECIAL PROJECTS (1-2)**

Hours by arrangement.

Prerequisite: Sophomore standing and permission of the Chairman of the English Division.

Students will present a paper or papers dealing with a specific topic in literature or language, a topic beyond the scope of offered courses.

OTHER NON-TRANSFER COURSES

7 DEVELOPMENTAL READING (2)

One class hour per week of lecture and discussion. Two hours in the reading lab with individual work on machines such as the Craig Reader, Rateometer, Tachistoscope and Shadowscope with further practice and study in small groups under the direction of the instructor. One hour each week using the Rateometer in the library.

Training in perceptual skills, vocabulary, reference skills, speed and comprehension; special emphasis on analytical and critical reading.

***51 THE SHORT STORY (2)**

Two class hours per week.

Study of short stories. Class discussion; lectures.

***52a MASTERPIECES OF EUROPEAN LITERATURE (3)**

Three class hours per week.

Study of various works of European literature from the classical period to the 17th Century. Reading, analysis and discussion of selected works; written reports; lectures.

***52b MASTERPIECES OF EUROPEAN LITERATURE (3)**

Three class hours per week.

Study of various works of European literature from the 17th Century to the present day, with emphasis on European prose writings. Reading, analysis and discussion of selected works; written reports; lectures.

***53 AFRO-AMERICAN LITERATURE (3)**

Three class hours per week.

A comprehensive survey of Afro-American letters in the United States from 1619 to the present.

***57a-57b ENGLISH AS A SECOND LANGUAGE (5-5)**

Five class hours per week.

Prerequisite: 57a—Permission of instructor. 57b—57a or permission of instructor.

Study of English grammar and composition, drill in oral and written vocabulary, sentence structure and English idiom.

***66 SCIENCE FICTION AND FICTION OF FANTASY (3)**

Three class hours per week.

Study of major themes and methods of science fiction and the fiction of fantasy. Works read will range from ancient to contemporary times.

67 READING LABORATORY (1)

Five class hours per week for eight weeks.

Individual work on machines such as the Craig Reader, Rateometer, Tachistoscope and Shadowscope with further practice and study in small groups under the direction of the instructor. Training in perceptual skills, vocabulary, speed and comprehension and reference skills.

May be repeated once for credit.

***68 CONTEMPORARY LITERATURE (3)**

Three class hours per week.

Study of the main currents of contemporary American, English and Continental literature. Works read will include poetry, novels and plays.

***74 PRINCIPLES OF COMEDY (3)**

Three class hours per week.

*Day only.

A study of the principles of comedy as expressed in plays and movies. To lead students to understand the comic vision and to read comic plays; to encourage students to attend comic plays and classic comic movies.

***75 FILM STUDY: THE CINEMA (2)**

One lecture hour and two lab hours per week.

Viewing of a number of significant motion pictures; analyzing, interpreting, and evaluating these films; discussion of specific pictures and cinema in general.

Environmental Science

***10 INTRODUCTION TO THE SOCIAL AND NATURAL ASPECTS OF ECOLOGY (3)**

Three hours of lecture per week.

Introduction to the methods, concepts, materials, and point of view of various disciplines that contribute to the study of ecology. The ecological or wholistic approach is used to study problems on widely different scales.

Staff from various disciplines will conduct the course and students spend the entire semester working for short periods with each member of the staff.

Ethnic Studies

***1 INTRODUCTION TO ETHNIC STUDIES (3)**

Three lecture hours per week.

The history and role of people of color in the United States. Survey of the social, political, economic and cultural development and contributions of these people from their introduction into the United States until the present day.

***3 BROWN AND RED PEOPLES IN THE UNITED STATES (3)**

Three lecture hours per week.

Prerequisite: None: E.S. 1 recommended.

The entrance, growth and development of the Brown and Red peoples in the United States. Their specific contributions in the political, economic and historical growth of America will be explored with emphasis on their achievements and their past, present and future goals.

***6 PATTERNS OF PREJUDICE AND RACISM (3)**

Three lecture hours per week.

Prerequisites: Sophomore standing; Psych. 1a or 10 recommended.

The problems of prejudice and racism. Personality development, psychoanalytic theories of prejudice, and racist-oriented trends and patterns will be explored in depth with a consideration of the mythical and factual concepts employed to substantiate prejudice included in discussions and presentations.

***7 PSYCHOLOGY OF PEOPLE OF COLOR (3)**

Three lecture hours per week.

Prerequisites: Psychology 1a is recommended.

The course will deal with the emotional and behavioral attitudes of people of color. It will consider the psychological effects of institutionalized discrimination, the learning of alternative attitudes, and the projection and transfer of hostilities.

***8 CULTURAL CONTRIBUTIONS OF BROWN AND RED PEOPLES (3)**

Three lecture hours per week.

Prerequisites: None. Introduction to Ethnic Studies recommended.

Course will present the cultural contributions including art, drama, music, dance, and dress patterns intrinsic to the culture of Brown and Red peoples. It will emphasize the significance of each of these art forms to American life and how they have affected the American scene.

***11 LITERATURE AND LIFE OF BROWN AND RED AMERICANS (3)**

Three lecture hours per week.

Prerequisites: None. Introduction to Ethnic Studies recommended.

The life of Brown and Red Americans will be examined through literary works of its writers. The course will emphasize the writer's contributions to define American life and his attempt to articulate the anxieties, joys, frustrations, and sorrows of his people. It will investigate his life in relation to his changing environment as described by his literary works.

***16 SOCIAL DYNAMICS OF PEOPLE OF COLOR (3)**

Three lecture hours per week.

Prerequisite: None. E.S. 1 recommended.

The social structures and institutions of people of color and their growth and development as influenced by the dominant society. The nature of the urban ghetto and slums and the rural ethnic communities will be studied and contrasted. The family structure, political and economic institutions and church will be considered in respect to social stratification and interracial relationships.

*Day only.

§Evening only.

Fire Science

The Fire Science Certificate Program is divided into two parts. Fifteen units of course work lead to the basic certificate. An advanced certificate is awarded upon completion of an additional 15 units.

Basic Certificate (15 units)

1. A minimum of 12 of the 15 units must be completed at College of San Mateo.
2. A minimum of 12 of the 15 units must be selected from the Fire Science courses listed below.

Advanced Certificate (30 units)

1. A minimum of 24 of the 30 units must be completed at College of San Mateo.
2. A minimum of 24 of the 30 units must be selected from the Fire Science courses listed below.

The additional units for both the Basic and Advanced Certificates must be selected from the Fire Science curriculum or one of the following:

Public Speaking
Report Writing
Public Relations

Business Law
Human Relations
Political Science

§50 FIRE FIGHTING TACTICS (3)

Study of the facts and probabilities, the fireman's own situation, decision and plan of operation in combatting a variety of conflagrations.

§51a FIRE SCIENCE HYDRAULICS (3)

Basic mathematics, principles of hydraulics, calculations of engine and nozzle pressures, discharge, fire streams, friction laws and pumps.

§52 A.I.A. GRADING SCHEDULE (3)

Application of American Insurance Association standards to the various aspects of water supply, fire department, fire alarm, police, building law, hazards and structural conditions.

§53 COMPANY ADMINISTRATION (3)

A study of personnel, company response, maintenance of buildings, assignments, districts, duties and responsibilities of a company officer.

§54 PERSONNEL ADMINISTRATION (3)

Organization and administration of a personnel department; analysis, classification and description of jobs; incentives; evaluation; placement activities; training, safety, medical, grievances, discipline and employee benefits.

§55 INTRODUCTION TO FIRE PROTECTION AND SUPPRESSION (3)

The philosophy and history of fire protection characteristics and behavior of fire, fire extinguishing agents; fire protection organization and equipment. A brief introduction to the American Insurance Association Grading Schedule and its relation to insurance rates is also considered.

§56 FIRE PREVENTION (3)

Fundamentals of fire prevention techniques, procedures, regulation and enforcement; discussions of hazards in ordinary and special occupancies; organization and functions of fire prevention bureaus.

§61 FIRE DEPARTMENT APPARATUS AND EQUIPMENT (3)

Operation, care and maintenance of fire apparatus and pumps, basic mathematics and hydraulics, effective fire streams, inspection and records.

§62a-62b HAZARDOUS MATERIALS I AND II (3-3)

Review of basic chemistry; storage, handling, laws, standards and fire fighting practices pertaining to hazardous solids, liquids and gases.

§63 BUILDING CONSTRUCTION FOR FIRE PROTECTION (3)

Fundamentals of building construction, fundamental code requirements, and the operation and the safety required by the Building Trades.

§64 FIRE PROTECTION EQUIPMENT AND SYSTEMS (3)

Use of portable fire extinguishing equipment; sprinkler systems; protection systems for special hazards; fire alarm and detection systems.

§65 RELATED CODES AND ORDINANCES (3)

Study and familiarization with national, state, and local laws and ordinances which influence the field of fire prevention.

§66 RESCUE PRACTICES (3)

The following topics are included: rescue practices, emergency care of victims, artificial respiration, toxic gases, chemicals and diseases, radioactive hazards, rescue problems and techniques.

§Evening only.

*Day only.

§67 FIRE INVESTIGATION I (3)

Introduction to arson and incendiarism, arson laws and types of incendiary fires. The course also deals with the methods of determining fire cause, recognizing and preserving evidence, interviewing and detaining witnesses; procedures in handling juveniles; court procedure and giving court testimony.

Foreign Language

Students who expect to transfer to a four-year institution are strongly advised to study a foreign language at the College. (Specific languages are listed alphabetically.)

***39 THE RUSSIAN NOVEL IN TRANSLATION (3)**

Three class hours per week.

Prerequisite: Average grade of C or better in English.

Samples of Russian literature from the 19th Century classic period to contemporary Soviet literature. Reading, analysis, and discussion of representative works. Lectures, written reports.

No knowledge of Russian required. May be repeated for three units of credit if different materials are read.

***40 FRENCH LITERARY MASTERPIECES IN TRANSLATION (3)**

Three class hours per week.

Prerequisite: Average grade of C or better in English.

Samples of French literature from the classical period to contemporary writers. Reading, analysis and discussion of several representative works. Lectures, discussions and reports.

No knowledge of French required. May be repeated for three units of credit if different materials are read.

***41 GERMAN LITERARY MASTERPIECES IN TRANSLATION (3)**

Three class hours per week.

Prerequisite: Average grade of C or better in English.

Samples of German literature from the classical period to contemporary writers. Reading, analysis and discussion of several representative works. Lectures, discussions and reports.

No knowledge of German required. May be repeated for three units of credit if different materials are read.

***42 SPANISH LITERARY MASTERPIECES IN TRANSLATION (3)**

Three class hours per week.

Prerequisite: Average grade of C or better in English.

Samples of Spanish literature from the classical period to contemporary writers. Reading, analysis and discussion of several representative works. Lectures, discussions and reports.

No knowledge of Spanish required. May be repeated for three units of credit if different materials are read.

***49 SPECIAL PROJECTS (1-2)**

Hours by arrangement.

Prerequisite: Permission of Chairman of Foreign Language Division.

Students will have projects dealing with specific aspects of a foreign language and a foreign literature.

May be repeated for credit.

French

Language Laboratory and Listening Requirement—Students enrolled in certain courses in foreign language are required to make use of the language laboratory as prescribed by each department. Imitation, response and independent practice are an integral feature of the study of a foreign language at the College.

***1 ELEMENTARY FRENCH (5)**

Five class hours and 2 hours recording per week.

Prerequisite: Average grade of C or better in English.

Conversation in the language, dictation, reading, study of the fundamentals of grammar and the writing of simple French exercises.

***2 ADVANCED ELEMENTARY FRENCH (5)**

Five class hours and two hours listening or recording per week.

Prerequisite: Completion on the college level of the first semester with a passing grade or assignment by the Foreign Language Division on the basis of the Foreign Language Placement Test in French.

Conversation, dictation, further study of grammar and sentence structure; study of cognates, derivatives and idioms, reading of short stories.

***3 INTERMEDIATE FRENCH (5)**

Five class hours and two hours listening or recording per week.

Prerequisite: Completion on the college level of the first two semesters with a passing grade or assignment by the Foreign Language Division on the basis of the Foreign Language Placement Test in French.

*Day only.

Reading of short stories, plays or novels; review of grammar, conversation, composition, dictation.

***4 ADVANCED INTERMEDIATE FRENCH (3)**

Three class hours and two hours listening or recording per week.

Prerequisite: Completion on the college level of the third semester with a passing grade or assignment by the Foreign Language Division on the basis of the Foreign Language Placement Test in French.

Reading of selections from French literature and reading of a contemporary novel; further practice of conversation and composition; continued review of principles of grammar; analysis of idioms.

***8a-8b FRENCH CONVERSATION (2-2)**

Two class hours and two hours recording per week.

Prerequisites: 8a—Successful completion of two semesters of college-level work in French and concurrent enrollment in French 3. 8b—Completion of three semesters of French and concurrent enrollment in French 4 or 25. Native speakers not eligible.

Practice in conversation based on French customs and culture.

***25a-25b ADVANCED FRENCH (3-3)**

Three class hours and two hours listening or recording per week.

Prerequisites: 25a—Completion of the fourth semester with a passing grade or assignment by the Foreign Language Division on the basis of the Foreign Language Placement Test in French. 25b—French 25a.

Reading and discussion of works of French literature. Continued review of principles of grammar.

***30 INDIVIDUAL READING (1-2)**

Conference periods for oral reports. Time to be arranged. A minimum of three hours of reading per each unit of credit is required weekly.

Prerequisites: French 4, permission of instructor, and concurrent enrollment in or completion of French 25a or 25b.

Reading of French classics, contemporary literature or recent periodicals.

May be repeated for credit.

§100a CONVERSATIONAL FRENCH, ELEMENTARY (2)

Three class hours per week.

A practical course in the French language approached by way of conversation. Intensive drill in the patterns and idioms of daily speech is supported with sufficient grammar to give flexibility in the spoken language.

This course will not fulfill language requirement at California State Colleges or at the University of California.

§100b CONVERSATIONAL FRENCH, ADVANCED ELEMENTARY (2)

Three class hours per week.

Prerequisite: French 100a or equivalent.

Further work in conversation following the model of French 100a.

This course will not fulfill language requirement at California State Colleges or at the University of California.

§100c CONVERSATIONAL FRENCH, INTERMEDIATE (2)

Three class hours per week.

Prerequisite: French 100b or equivalent.

More advanced work in conversation following the model of French 100b.

This course will not fulfill language requirement at California State Colleges or at the University of California.

Geography

1a PHYSICAL GEOGRAPHY (3)

Three class hours per week plus field trips.

Basic characteristics of maps, the earth's grid, seasons, time, weather and climate, land forms, soil, oceans, natural vegetation and the interrelationship of all these basic factors. Maps and the regional concept are the primary tools for this study.

1b CULTURAL GEOGRAPHY (3)

Three hours per week for lecture, discussion and demonstration.

By using maps and the concept of regions, this course attempts to show and describe the areal distribution of the most important parts of man's culture. Emphasis is placed on the way he makes a living. Consideration is also given to the origin and development of man, population distribution and settlement patterns.

4 ECONOMIC GEOGRAPHY (3)

Three hours per week for lecture, discussion and demonstration.

§Evening only.

*Day only.

In part, an investigation and description of the basic resources in the different parts of the world. Also, an attempt will be made to evaluate the effects of different cultural and physical environments upon the utilization of these resources. More specifically, this course will deal with the products of the various agricultural areas of the world, the mineral resources, industry, transportation, communication and power production.

***5a WORLD REGIONAL GEOGRAPHY (3)**

Three hours per week for lecture, discussion and demonstration.

Study of North and South American landscapes and how they have changed under the impact of population, technological and social change; resulting problems and physical, historical and economic patterns.

***5b WORLD REGIONAL GEOGRAPHY (3)**

Three hours per week for lecture, discussion and demonstration.

Study of European, Asian and African landscapes and how they have changed under the impact of population, technological and social change; resulting problems and physical, historical and economic patterns.

***99 HISTORICAL GEOGRAPHY (3)**

Three lecture hours per week.

Prerequisite: Eligibility determined by counselor.

Analysis of selected problems from the historical geography of the United States. Emphasis is on discussion groups and the completion of assigned projects. Extensive use of audio-visual materials.

May be substituted for either History 17a or 17b in partial fulfillment of graduation requirements.

Geology

Each course in Geology is accepted by the University of California in partial satisfaction of the 12 units required in Natural Science.

***1a GENERAL GEOLOGY: DYNAMIC AND STRUCTURAL (4)**

Three lecture hours and one three-hour lab period per week plus two field trips.

Not open to students who have taken or are taking Geology 10.

An introduction to the nature and structure of the materials composing the earth and of the various processes which shape the earth's surface.

***1b HISTORICAL GEOLOGY (4)**

Three lecture hours and one three-hour lab period per week.

Prerequisite: *Geology 1a or Geology 10.*

Geological history of the earth and the evolution of its animal and plant inhabitants.

***6 ELEMENTARY MINERALOGY (4)**

Two lecture hours and two three-hour lab periods per week.

Prerequisites: *Elementary Chemistry recommended.*

Basic principles of crystallography, crystal chemistry and mineral formation. Laboratory includes mineral and rock identification, and work on crystal models and the crystal projections.

10 SURVEY OF GEOLOGY (3)

Not open to students who have taken or are taking *Geology 1a.*

Day: *Two lecture hours and one recitation period per week plus two field trips.*

Evening: *Three hours per week plus two Saturday field trips.*

Introduction to the scientific method and history of geology. Basic principles of igneous, sedimentary and metamorphic geology. Lectures on rocks, minerals and the origin of the earth, continents and mountains. A brief sketch of the geological history of the earth and the evolution of its animal and plant inhabitants.

GENERAL PALEONTOLOGY (See paleontology listing)

***49 SPECIAL PROBLEMS (1-2)**

Hours to be arranged.

Prerequisite: *Geology 1a or 1b or Paleontology 1 or Mineralogy 6, (sophomore standing and permission of Physical Science Chairman.)*

Field and/or lab and/or library studies centered in a geologic, paleontologic or mineralogic problem of interest to the student.

German

Language Laboratory and Listening Requirement—Students enrolled in certain courses in foreign language are required to make use of the language laboratory as prescribed by each department. Imitation, response and independent practice are an integral feature of the study of a foreign language at the College.

***1 ELEMENTARY GERMAN (5)**

Five class hours and 2½ hours listening or recording per week.

*Day only.

Prerequisite: *Average grade of C or better in English.*

Study and practice (both oral and written) of basic forms and patterns of German, development of a satisfactory pronunciation, the learning and using of vocabulary of high frequency, and the reading of simple German text. The student is required to make extensive use of the listening facilities in the College library and of the language laboratory.

***2 ADVANCED ELEMENTARY GERMAN (5)**

Five class hours and 2½ hours listening or recording per week.

Prerequisite: *German 1 with a passing grade or assignment by the Foreign Language Division on the basis of the Foreign Language Placement Test in German.*

A continuation of work begun in German 1, with continued practice in listening, speaking, reading (of more difficult textual material) and writing. (See "Language Laboratory Requirement" above.)

***3 INTERMEDIATE GERMAN (5)**

Five class hours and 2 hours listening or recording per week.

Prerequisite: *German 2 with a passing grade or assignment by the Foreign Language Division on the basis of the Foreign Language Placement Test in German.*

Reading of modern writers, advanced grammar and syntax; study of idioms; study of vocabulary through cognates, derivatives and word building.

***4 ADVANCED INTERMEDIATE GERMAN (3)**

Three class hours and one hour listening per week.

Prerequisite: *German 3 with a passing grade or assignment by the Foreign Language Division on the basis of the Foreign Language Placement Test in German.*

More time and attention are devoted to reading; texts are by German authors, beginning with Goethe to recent times. Study of word families, derivatives, compounds, idioms; practice of patterns; aural practice.

***8a-8b GERMAN CONVERSATION (2-2)**

Two class hours and one hour of recording per week.

Prerequisites: *8a—Successful completion of two semesters of college-level work in German. 8b—Successful completion of three semesters of college-level work in German. Native speakers not eligible.*

Conversation based upon German customs, manners, mores, history, newspapers, periodicals, plays and short stories.

***25a-25b ADVANCED GERMAN (3-3)**

Three class hours per week.

Prerequisites: 25a—German 4; 25b—German 25a.

Oral and written composition, class reading of works of German literature, extensive collateral reading of varied types of German literature and study of a review of grammar.

***30 INDIVIDUAL READING (1-2)**

One conference period per week or oral report.

Prerequisite: Permission of the instructor after evaluation of previous preparation, usually at least German 4.

Minimum requirements: 54 hours of reading for each unit granted. Credits are based on the reading accomplished by each student.

Modern books or recent periodicals. The student's preference determines largely the choice of the reading material.

(May be repeated for credit.)

§100a CONVERSATIONAL GERMAN, ELEMENTARY (2)

Three class hours per week.

A practical course in the German language approached by way of conversation. Intensive drill in the patterns and idioms of daily speech is supported with sufficient grammar to give flexibility in the spoken language.

This course will not fulfill language requirement at California State Colleges or at the University of California.

§100b CONVERSATIONAL GERMAN, ADVANCED ELEMENTARY (2)

Three class hours per week.

Prerequisite: German 100a or equivalent.

Further work in conversation following the model of German 100a.

This course will not fulfill language requirement at California State Colleges or at the University of California.

Guidance

***10 INTRODUCTION TO COLLEGE (2)**

Two hours a week.

Open to all students but strongly recommended for entering freshmen students enrolled in general courses with an "undecided" major, or for students who desire to verify their vocational and educational choice.

Acquaintance with campus facilities and activities, improvements of study habits and basic skills needed in college subjects, educational planning for ultimate vocational goal.

*Day only.

§Evening only.

Self-appraisal by means of tests measuring potential abilities, interests, aptitudes and past achievement as well as personal, emotional and social adjustment.

***99 LEARNING CENTER (0-2)**

Five hours per week.

The Learning Center program is intended to help the student toward full realization of his potential through his college experience in both academic and non-academic areas. He may choose to work in one or more of the following areas: interaction groups with faculty and fellow students, tutorial program, development of college-level reading and study skills, or individualized programmed instruction.

Health Science

1 GENERAL HEALTH EDUCATION (2)

Two class hours per week.

Health Science 1 or 2 required for A.A. Degree.

Intended for Non-Life Science Majors, or those who lack a strong high school background in science.

An attempt to motivate students toward positive health attitudes and practices by presenting general information on such vital topics as reproduction and birth control, as well as the prevention and treatment of current major physical and emotional health problems.

2 HUMAN BIOLOGY AND HEALTH (2)

Two class hours per week.

Health Science 1 or 2 required for A.A. Degree

Intended for Life Science majors or those with a strong high school background in science.

A detailed examination of the causes, symptoms, prevention, and treatment of major health problems through the presentation of up-to-date, factual, scientific information. To include such topics as hereditary and congenital birth defects, contraception, abortions, venereal disease, cancer, drug abuse, etc.

§3 FIRST AID (1)

Two hours per week for eight weeks.

Required of all candidates for graduation who do not hold standard Red Cross certificates, not required of those who have graduated from a California high school since 1952.

Instruction in the immediate, temporary treatment given in case of accident or sudden illness before the services of a physician can be secured.

***9 NUTRITION (2)**

Two lecture hours per week.

Basic concepts of nutrition and their relationship to health of people of all ages with application to the selection of foods to meet nutritional need of the individual.

This course is identical to Home Economics 9.

History

4a HISTORY OF WESTERN CIVILIZATION (3)

Three class hours per week.

The rise and decline of the civilization of the ancient world, the rise of Christianity, the growth and decline of Medieval society, the Renaissance, the Reformation and the opening of the modern world.

4b HISTORY OF WESTERN CIVILIZATION (3)

Three class hours per week.

Prerequisite: None. History 4a is recommended.

The rise of modern Europe: the Enlightenment, the French Revolution and the growth of Liberalism. The emergence of modern society: economic problems of industrialization, development of modern ideologies, and the World Wars and international experiments of the 20th Century.

*4c HISTORY OF AMERICAN CIVILIZATION (3)

Three class hours per week.

Prerequisite: History 4a.

The colonial settlement of North America, the Enlightenment, the age of revolution and the growth of democracy, the problems of industrialization, the emergence of modern society, the effects of the expansion of the 19th and 20th Centuries upon the culture of America and the role of the United States in the modern world.

History 4a-4c (six units) fulfills American Institutions requirement.

5 HISTORY OF ENGLAND (3)

Three lecture hours per week.

A survey, including in its scope the more important political, constitutional, economic, social and cultural phases of the history of the English people.

This course, though especially designed for pre-Legal and English majors, is also of great value to the general student interested in international relations or the background of American culture.

*6a AFRICAN CIVILIZATIONS (3)

Three lecture hours per week.

*Day only.

Will deal with the period prior to 1800. The sources of African history, Africa in ancient times, the spread of Islam, the era of empires and city-states, Africa and the first period of European expansion, kingdoms of the Savannah and forest, coastal tropical Africa and the Atlantic world.

*6b AFRICAN CIVILIZATIONS (3)

Three lecture hours per week.

Will deal with the period after 1800. African civilizations and cultures, political reorganizations, developments in Northern Africa, Nineteenth Century Jihads, interaction of Africa and Europe, the European scramble for Africa and its partitioning, consolidation of colonial control and the rise of African nationalism.

*8a HISTORY OF AMERICAS (3)

Two hours of lecture and one hour of class discussion per week.

A general survey of the history of North and South America, from the times of the pre-Columbian Indian civilizations, through the European conquests, to the ages of the revolutions against the European colonizing powers.

*8b HISTORY OF AMERICAS (3)

Two hours of lecture and one hour of class discussion per week.

Prerequisite: None. History 8a is recommended.

A general survey of the history of North and South America, from about 1830 until the present. Emphasis is placed upon the larger countries of the Western Hemisphere, and also upon the development during the crucial period which began with the outbreak of World War II and has continued until contemporary times.

11 ECONOMIC HISTORY OF THE UNITED STATES (3)

Three class hours per week.

Prerequisite: None. Economics 1a and 1b are recommended.

The origin and development of the American economy from colonial times to the present. Includes the basis for industrial growth, land and resource use, the transportation revolution, the development of money and banking machinery, changing trade patterns, the rise of organized labor, the economic role of government.

This course is identical to Economics 11; with History 17a or 17b, fulfills American Institutions requirement.

12 ECONOMIC HISTORY OF EUROPE (3)

Three class hours per week.

Prerequisite: None. Economics 1a and 1b are recommended.

The roots of modern economic society will be traced to their European origins. The rise of mercantilism, the market system, modern industrialism will be sketched against the ancient and medieval background. Attention will be given to 20th Century interwar and postwar developments, including recent movements toward European economic union.

This course is identical to Economics 12.

17a AMERICAN HISTORY (3)

Three class hours per week.

A survey of English colonialization along the Atlantic Coast, the westward expansion of the colonists, the Revolution, the formation of the Constitution, the Federalist and Jeffersonian systems, the reign of Andrew Jackson, the slavery issue and Civil War. Economic, political, social and cultural developments of the period are included.

17b AMERICAN HISTORY (3)

Three class hours per week.

Prerequisite: None. History 17a is recommended.

The course continues the work of 17a, developing the reconstruction period, industrial expansion, social and economic development, and the foreign policies of the U.S. through World War II.

History 17a-17b (6 units) fulfills American Institutions requirement.

***20a-b TWENTIETH CENTURY EUROPE (3-3)**

Three lecture hours per week.

History 20a will begin in 1870, the year of the unification of Germany and Italy—the events which ushered in the present period of European history. Covering social and intellectual, as well as political and military affairs, course 20a will proceed through World War I to the settlements of 1919. History 20b will deal with Europe after the first World War. The brief optimism of the 1920's will be followed by the slide into depression and another war. The story of Europe after World War II will receive much attention.

§22 CALIFORNIA HISTORY (3)

Three lecture hours per week.

The story of Spanish, Mexican and American pioneers who in less than 200 years made California what it is today.

History 22 satisfies the requirement for one semester hour in California State and Local Government.

***23a CALIFORNIA HISTORY (2)**

Two class hours per week.

The story of the Spanish, Mexican and early American heritage of pre-Gold Rush California. This semester dwells on Spanish imperial problems, California-directed explorations and the California missions.

*Day only.

§Evening only.

***23b CALIFORNIA HISTORY (2)**

Two class hours per week.

Prerequisite: None. History 23a is recommended.

The Gold Rush and its impact on 19th Century California. This semester emphasizes the political, social and economic background of modern California.

Satisfies the requirement for one semester hour in State and Local Government.

***24 AMERICAN FOREIGN POLICY (3)**

Three class hours per week.

An historical inquiry into the background of major problems in foreign policy of our own day. Special attention is given to the period since World War II.

With History 17a or 17b, fulfills American Institutions requirement.

***25 THE AMERICAN WEST (3)**

Three class hours per week.

Prerequisite: None. History 17a is recommended.

The movement of Americans west of the Mississippi River, with an emphasis on fur trading, cattle raising, farming, mining, railroad building, community building, Indian problems, and the character and image of the West and Westerners.

With History 17a or 17b, fulfills American Institutions requirement.

***26 U.S.: 20TH CENTURY AMERICAN HISTORY (3)**

Three lecture hours per week.

Major economic, political, social and intellectual developments since the United States emerged as a major power at the turn of the century.

With History 17a or 17b, fulfills American Institutions requirement.

33 THE AFRO-AMERICAN IN U.S. HISTORY (3)

Three class hours per week.

Prerequisite: None. History 17a is strongly recommended.

Social, economic and political facts as they relate to the Afro-American. Race relations will be analyzed and special emphasis will be given the history of the Afro-American.

With History 17a or 17b, fulfills American Institutions requirement.

***34a-b AFRO-AMERICAN HISTORY (3-3)**

Three lecture hours per week.

Prerequisite: History 17a or 17b recommended, preferably both, or History 33.

34a—The chronology of the history of Afro-Americans from the age of discovery to the present. All relevant social, economic and political elements will be dealt with. The development of the racist elements in North American culture will be studied as it bears on the Afro-Americans.

34b—Takes the student to the present from the period after 1865.

History 34a or 34b with History 17a or 17b fulfills American Institutions requirement.

***35 CIVIL WAR AND RECONSTRUCTION (3)**

Three lecture hours per week.

Prerequisite: None. History 17a or 17b recommended.

A survey and analysis of the political, social and economic problems of the North and South during the ante-bellum, Civil War and Reconstruction eras.

With History 17a or 17b, fulfills the American Institutions requirement.

44 HISTORY OF THE FAR EAST (3)

Three class hours per week.

An introductory survey of the political, social and economic history of the countries of the Far East. The response of Asia to the impact of the western world is a central theme of the course. An analysis will be made of contemporary trends and problems with particular reference to China and Japan. The historical developments of India, Pakistan and the countries of Southeast Asia will also be considered.

***45 HISTORY OF MODERN RUSSIA (3)**

Three class hours per week.

A careful analysis of the development of Russia from a loose federation of city-states into an autocratic nation, and finally into the modern Soviet state. Approximately one-third of the course will be devoted to the political, economic and cultural development of 20th Century Russia.

***46 MODERN GERMANY (3)**

Three class hours per week.

Impact of the French Revolution and the Napoleonic Wars on Germany; the German Confederation; liberalism and nationalism; the Revolutions of 1848; Bismarck and German unification; the German Empire; William II and the First World War; the Weimar Republic; the Nazi era; World War II and Nazi collapse; the two Germanies; German character and historical heritage.

***49 SPECIAL PROJECTS (1-2)**

Prerequisite: Consent of the instructor and Social Science Division chairman.

*Day only.

§Evening only.

Students will prepare a paper on a specific topic or complete a course of directed reading and a written report.

May be repeated for credit.

§50a-50b CURRENT WORLD AFFAIRS (3-3)

Three class hours per week.

A course designed to achieve a deeper understanding of current happenings through analysis of their geographic and historical context, and their relation to worldwide developments.

99 HISTORICAL GEOGRAPHY (3)

Three class hours per week.

Prerequisite: Eligibility determined by counselor.

Analysis of selected problems from the historical geography of the United States. Emphasis is on discussion groups and the completion of assigned projects. Extensive use of audio-visual materials.

With History 17a or 17b, fulfills American Institutions requirement.

Home Economics

***1 FOOD SELECTION AND PREPARATION (3)**

Prerequisites: None. Open to men and women.

One two-hour lecture and one three-hour lab per week.

A study of scientific principles of selection, storage and preparation of food. Presentation and economy are emphasized.

***2 FOOD BUYING AND MEAL MANAGEMENT (3)**

One two-hour lecture and one three-hour lab per week.

Prerequisite: Home Economics 1. Open to men and women.

Food buying, meal preparation and service. Emphasis is also given to kitchen equipment and organization, quick meals, economical meals and foreign cookery.

***5 EXPLORATIONS IN HOME ECONOMICS (1)**

One lecture hour per week.

Introduction to the range of subject matter to be selected in two- and four-year programs. Relationship of art and science courses to the Home Economics curriculum. An exploration of the opportunities, career goals and responsibilities of the home economist.

***9 NUTRITION (2)**

Two lecture hours per week.

Basic concepts of nutrition and their relationship to health of people of all ages with application to the selection of foods to meet nutritional need of the individual.

This course is identical to Health Science 9.

***20 CLOTHING (3)**

Two lecture hours and three lab hours per week.

Principles of clothing construction using custom techniques. Emphasis on selection of pattern and pattern alteration and fitting.

***21 CLOTHING (3)**

Two lecture hours and three lab hours per week.

Prerequisite: Home Econ. 20 or equivalent.

The use of custom details, couturier and tailoring techniques in construction of high quality clothing. Consideration also given to organization and speed techniques.

***22 TEXTILES (3)**

Three lecture hours per week.

Study of natural and chemical fibers; yarns and fabric construction and finishes. Care, cost and labelling as related to consumer use.

***24 SELECTING CLOTHING FOR THE INDIVIDUAL (2)**

Two lecture hours per week.

Coordinating costume and accessories to the individual by use of principles of design and color which do not change with styles and fashions and are applicable to all budgetary levels. Of special interest to those preparing for professional work.

***26 CREATIVE CLOTHING DESIGN AND CONSTRUCTION (2)**

Two lecture hours per week.

The construction and use of flat patterns and draping as methods of creating a chosen design for the individual with consideration of fabric performance.

***26L CREATIVE CLOTHING DESIGN AND CONSTRUCTION (1)**

Three lab hours per week.

Prerequisites: Home Econ. 20b and concurrent enrollment in Home Econ. 26.

Designed as an optional lab period to accompany Home Econ. 26.

***28 FASHION AND THE CONSUMER (3)**

Three lecture hours per week.

*Day only.

A consideration of the clothing needs of the various groups and of many forces (economic, sociological, psychological and technological) which influence the consumer and the clothing market.

***30 FASHION MERCHANDISING (4)**

Four lecture hours per week.

Prerequisite: Home Econ. 28.

Structure of ready-to-wear apparel industry, including the functions and policies of the various types of retail stores as they relate to the promotion of fashion merchandising; consideration of the various factors which affect the merchandising of fashion apparel.

***32 FASHION COORDINATING AND DISPLAY (3)**

Three lecture hours per week.

Prerequisite: Home Econ. 30.

Study of the elements of fashion which make for success in fashion merchandising: store windows, interior display, sales promotion activities and techniques in displaying fashion.

***37 DEMONSTRATION TECHNIQUES (2)**

Two lecture hours per week.

Development of techniques for demonstrating fabrics, home equipment, clothing, foods and other subjects of promotional and educational use in women's world of work.

***40 INTERIOR FURNISHINGS (3)**

Two lecture hours and three lab hours per week.

Selection of furniture, floor coverings and materials from an artistic and practical standpoint. Construction of draperies, bedspreads and slip covers.

45 CONSUMER ISSUES AND BUYING PROBLEMS (3)

Three lecture hours per week.

A study of problems facing the consumer; relationship of quality and cost to food, clothing, housing; legislation and agencies protecting the consumer.

52 GOURMET FOODS (2)

One two-hour lecture-demonstration.

Planning, selection and preparation of foods for meals for optimum health.

An introductory course not open to Home Economics majors; designed especially for those who wish to serve gourmet, nutritional meals.

***55 HOME DECORATION (2)**

Two lecture hours per week.

An appreciation and application of the elements that contribute to the art of decorating the home. It will provide a knowledge of the relevant arts, crafts and trades and how they are utilized.

§65a-65b CLOTHING CONSTRUCTION (1-1)

One three-hour lecture-lab per week.

Color analysis, design, fabric and pattern selection; basic construction techniques and commercial patterns used to develop an individual project.

§66a-66b CLOTHING CONSTRUCTION (1-1)

One three-hour lecture-lab per week.

Prerequisite: 65b or equivalent.

Tailoring and custom techniques and finishes (underlinings, interfacing, and linings.) Emphasis on pattern alteration and fitting for the individual.

§67a-67b PATTERN DRAFTING AND CONSTRUCTION (1-1)

One three-hour lecture-lab per week.

Prerequisite: 66b or equivalent.

Advanced construction techniques and custom details used in construction of an original design created by the student.

Horticulture (Ornamental)

The College offers certificate programs in both Ornamental Horticulture and Vocational Gardening based upon a combination of certain required and elective courses and concurrent practical experience in either field. Credits earned may also be applied toward the Associate in Arts degree. It is possible to enroll in individual classes without regard to the certificate program. For further details, consult the Horticulture brochures available at the College Library or Information Office.

§90a-90b PEST CONTROL: HORTICULTURE ENTOMOLOGY (2-2)

Three hours per week.

Prerequisite: 90a—None; 90b—Hort. 90a.

This course is designed for professionals employed in ornamental horticulture.

A study of the common insect and mite pests which attack horticultural plants in the Bay Area. Identification, classification, life cycles and the latest methods of control.

§Evening only.

§90c-90d PEST CONTROL: HORTICULTURE PLANT DISEASES (2-2)

Three hours per week.

Prerequisite: 90c—None; 90d—Hort. 90c.

A study of the common disease-causing fungi, bacteria, physiological, nematode and virus pests which attack horticultural plants in the Bay Area. Identification, classification, life cycles and the latest methods of control.

§90e PEST CONTROL: INSECTICIDES, FUNGICIDES, EQUIPMENT (2)

Three hours per week.

History and development of pesticides, pest control equipment, insecticides, fungicides, disinfectants and nematocides. Soil fumigants, composition, formulation, uses, compatibilities. California Agricultural Code and pest-control operator's license examination.

§90f PEST CONTROL: WEEDS AND RODENTS (2)

Three hours per week.

Identification, dissemination methods and control of principal garden, lawn and turf weeds, and weedy grasses. Herbicides, their characteristics and uses; brush control. Chief rodent and animal pests of landscaped areas, and control methods.

§91a-91b GENERAL ORNAMENTAL HORTICULTURE (2-2)

Three hours per week.

This course is designed to give the student a wide concept of the field of ornamental horticulture. Soils, manures and fertilizers, lawn establishment and turf management. Plant propagation, pruning, choice of plant tools and machinery, insecticides, fungicides and weedkillers.

§93 HORTICULTURE SOILS AND PLANT GROWING (2)

Three hours per week.

Fundamental principles of soils, soil management, fertility and plant nutrition. Soil types, origins, characteristics; soil organic matter, biological relationships. Commercial and natural fertilizers and amendments; soil structure and conditioners; soil moisture, movement, percolation, irrigation and drainage; sprinkler and irrigation principles; installation, management.

§94 PLANT PROPAGATION AND NURSERY PRACTICE (2)

Three hours per week.

Principles and practices of propagating plants for sale and for landscape use, including laboratory work in making cuttings, grafting and budding, potting, canning. Visits to wholesale and retail nurseries. Seedage, cuttage, layerage, plant breeding and improvement.

§95a-95b HORTICULTURE BOTANY AND PLANT MATERIALS (2-2)

Three hours per week.

The principles of plant classification, description, nomenclature, morphology, use of keys. Photosynthesis, transpiration, osmosis, mendelism, floral families. The study in class of plants commonly used in California parks and gardens. Emphasis on plant identification.

This course is identical to Biology 18a-18b.

§96a-96b LANDSCAPE GARDENING (2-2)

Three hours per week.

Principles of garden design and construction with emphasis on aesthetics and minimum maintenance. Draftsmanship, circulations, layout and perspective. Estimates and bills of quantity. Preparation of simple home ground landscape plans. Visits to outstanding landscaping.

§97a-97b ARBORICULTURE, SHRUBS AND FRUIT (2-2)

Three hours per week.

Principles and practices of selecting and training trees, shrubs and conifers for their aesthetic value. Emphasis on identification, planting, pruning, choice of site and cultural requirements. The training and management of fruit trees. Rootstocks, pruning, spraying, irrigation, pest and disease control, pollination and marketing.

§98a-98b GLASSHOUSE MANAGEMENT AND CROPS (2-2)

Three hours per week.

Study of greenhouses and lathhouses, and the materials used in their construction. Interior layouts. Ventilation, humidity and temperature control. The propagation and culture of roses, carnations, chrysanthemums, orchids, pot plants and other glasshouse crops. Pest and disease control.

***110a-b PLANTS AND LANDSCAPE (3-3)**

Two lecture hours and three lab hours per week.

Growth habits, cultural requirements and landscape uses of ornamental shrubs, vines, ground covers and trees adapted to the climates of California. Proper planting and maintenance techniques.

***111 LANDSCAPE MAINTENANCE AND EQUIPMENT (3)**

Two lecture hours and three lab hours per week.

§Evening only.

*Day only.

Maintenance and management of turf areas, including golf courses, athletic fields, parks and residential areas. Cultural requirements of trees, shrubs, vines, annuals and ground covers. Operation of landscape maintenance equipment.

***112 PLANT GROWING (3)**

Two lecture hours and three lab hours per week.

Soil, plant and fertilizer relationships. Physical, chemical and biological properties of soils as related to horticulture; soil sampling and testing; organic materials; water relationships; and the compositions, value, selection, use and application techniques of fertilizer materials and soil amendments. Practical experience in growing plants in the greenhouse.

This course is identical to Biology 19.

***113 LANDSCAPE CONSTRUCTION AND EQUIPMENT (3)**

Two lecture hours and three lab hours per week.

Planting and construction techniques; cost finding and estimating for the landscape trades, including contract writing and legal aspects of contracting.

Prepares students to pass the Landscape Contractor's License Examination (C27).

***114 INSECTS, WEEDS, DISEASES AND RODENT CONTROL (3)**

Two lecture hours and three lab hours per week.

Symptoms, identification and methods of control of the principal diseases, pests and weeds important in California landscape industry. Chemical, biological and cultural control and prevention.

§130a-130b VOCATIONAL BOTANY AND PLANT MATERIALS (1-1)

Three hours per week.

The principles of plant classification and nomenclature. The study of plant morphology, stems, roots, leaves and flowers. Osmosis, photosynthesis, transpiration and respiration. Floral families. The identification of plant materials used in California gardens and landscaping. Lists of plants for various situations.

§132a-132b GENERAL VOCATIONAL GARDENING (1-1)

Three hours per week.

The study of gardening in California. Soils, manures, fertilizers and amendments. Plant propagation. Turf management. Pruning and maintenance of trees and shrubs. Perennials, herbaceous perennials, annuals and biennials. Horticultural machines and tools. Insecticides and fungicides.

§135a-135b VOCATIONAL LANDSCAPE GARDENING (1-1)

Three hours per week.

Basic principles of landscape design, construction and estimating. Preparation of simple plans and layouts. Visits to outstanding landscaping exhibits.

Italian

§100a CONVERSATIONAL ITALIAN, ELEMENTARY (2)

Three class hours per week.

A practical course in the Italian language approached by way of conversation. Intensive drill in the patterns and idioms of daily speech is supported with sufficient grammar to give flexibility in the spoken language.

This course will not fulfill language requirement at California State Colleges or at the University of California.

§100b CONVERSATIONAL ITALIAN, ADVANCED ELEMENTARY (2)

Three class hours per week.

Prerequisite: Italian 100a or equivalent.

Further work in conversation following the model of Italian 100a.

This course will not fulfill language requirement at California State Colleges or at the University of California.

§100c CONVERSATIONAL ITALIAN, INTERMEDIATE (2)

Three class hours per week.

Prerequisite: Italian 100b or equivalent.

More advanced work in conversation following the model of Italian 100b.

This course will not fulfill language requirement at California State Colleges or at the University of California.

Journalism

***1 INTRODUCTION TO JOURNALISM (3)**

Three class hours per week.

A study of the historical background and modern functioning of the press (newspaper, radio, magazine, television) in a democratic society, and the virtues and shortcomings of each. The rights and duties of journalists, and the legal limits of the liberty of the press are studied.

§Evening only.

*Day only.

***2 NEWSWRITING (3)**

Two lecture hours and two lab hours per week.

Prerequisite: Journalism 1.

A study of the techniques of news gathering, judging new values, and of writing the news story. For practical experience, the students write for the college paper, "The San Matean," thus preparing them for future newspaper work.

***3 ADVANCED NEWSWRITING (3)**

Two lecture hours and two lab hours per week.

Prerequisite: Journalism 2.

A continuation of Journalism 2 with emphasis on detailed methods of and techniques for gathering and writing news. Practice in writing more complex and special story types. Individual writing conferences.

***15 NEWSPAPER PRODUCTION (2)**

Four class hours per week.

Prerequisites: Journalism 2 (may be taken simultaneously) and permission of instructor.

Production of the student newspaper, "The San Matean." Discussion and criticism of staff organization and newspaper content.

May be repeated for credit.

***16 MAGAZINE PRODUCTION (2)**

Four class hours per week.

Prerequisite: Permission of instructor.

Production of the student magazine, "Vintage." Discussion of techniques of publishing and production especially applied to school publications.

***49 SPECIAL PROJECTS (1-2)**

Hours by arrangement.

Prerequisites: Sophomore standing and permission of the English Division Chairman.

Students will investigate a topic of journalism beyond the scope of present courses and present it in a form applicable to newspaper production.

Library Technology

Upon completion of 24 semester units, a student may be awarded a certificate as a Library Technical Assistant. For the complete details, consult the Library Technician program brochure available in the Library.

§51 INTRODUCTION TO LIBRARY TECHNOLOGY (3)

Three class hours per week.

Introduces the student to the types of libraries (school, college, public and special) making a study of their services, functions and organizational patterns, job opportunities, salaries, benefits and working conditions. Emphasis is placed on library terminology and human relations in library work.

§52 LIBRARY TECHNICAL PROCESSES (3)

Three class hours per week.

Students will be introduced to acquisition work for books, periodicals, documents and recordings; processing of these materials from receipt to shelving and preparation of material for binding will be discussed. Documents, report literature and special materials handling will be part of the course.

§53 ELEMENTARY CATALOGING PROCEDURES (3)

Three class hours per week.

Prerequisite: Library Tech. 51 and typing ability equivalent to at least one year of typing.

Examines the card catalog, and its organization and function. Special attention to filing and to typing headings on cards. Book catalogs will be discussed, as well as the two major classification systems, with the resulting cataloging of some fiction and biography.

§54 PUBLIC SERVICES (3)

Three class hours per week.

Prerequisite: Library Tech. 51 or acceptable work experience.

Circulation procedures—manual and automated—for books, periodicals, pamphlets, documents and recordings will be discussed. Reserve collections will be studied, and elementary examination of reference tools and services. Emphasis will be placed on employee-patron relationships and the philosophy of service.

§55 NON-BOOK MATERIALS (3)

Three class hours per week.

Introduces the student to non-book materials and audio-visual equipment in libraries. Examination of audio installations and A-V facilities. Preparation of A-V materials and use of equipment will be taught.

Life Science (See Biology listings)

Machine Tools Technology

***51 APPLIED MACHINE SHOP MATHEMATICS (3)**

Three lecture hours per week.

§Evening only.

*Day only.

Areas, volumes, logarithmic calculations, slide rule calculation, weight, fundamentals of algebra, calculation of irregular areas and volumes.

***52 ELEMENTARY MACHINE SHOP THEORY (5)**

Five lecture hours per week.

Prerequisite: Concurrent enrollment in M.T.T. 52L.

Basic theory of operation of the six fundamental machine processes of turning, drilling, shaping, grinding, and the care and use of measuring instruments and tools. Mathematics: Areas, volumes, weights, geometry. Machine shop calculations, including fundamentals of trigonometry.

***52L ELEMENTARY MACHINE SHOP PRACTICE (4)**

Four three-hour periods per week.

Prerequisite: Concurrent enrollment in M.T.T. 52.

Manipulation of basic machine tools. Designed to accomplish operation skills with prescribed projects. Covers the six fundamental machining processes of drilling, turning, shaping, planing, grinding, use and care of measuring instruments and tools.

***53 INTERMEDIATE MACHINE SHOP THEORY (5)**

Five lecture hours per week.

Prerequisites: MTT 52, 52L, and concurrent enrollment in MTT 53L.

This course is a continuation of MTT 52. It is designed to further the student's knowledge through concentrated theory presentations covering precision grinding, milling machine operations, heat treating, and metallurgy.

***53L INTERMEDIATE MACHINE SHOP PRACTICE (4)**

Four three-hour periods per week.

Prerequisites: MTT 52, 52L, and concurrent enrollment in MTT 53.

This laboratory is a continuation of MTT 52L. It is designed to teach the student how to perform the more difficult machining operations. Laboratory activities include milling machine operation, precision grinding, thread cutting, and the heat treating of metals.

***62 ADVANCED MACHINE SHOP THEORY (3)**

Three lecture hours per week.

Prerequisites: MTT 53, 53L, or equivalent.

An introductory course in the theoretical principles and practical applications of numerical control as applied to the machine tool industry. The relationship between machine tool

principles, numerical control planning, and mathematics for numerical control are presented and studied with particular emphasis being placed upon programming.

***62L ADVANCED MACHINE SHOP PRACTICE (5)**

Five three-hour periods per week.

Prerequisites: MTT 52L, 53L, or equivalent.

External and internal thread cutting, cylindrical grinding, tool and cutter grinding, advanced machine tool practice, and an introduction to numerical control milling.

***63 TOOL AND DIE TECHNOLOGY THEORY (3)**

Three lecture hours per week.

Prerequisites: MTT 62, 62L, or equivalent.

Fundamentals of tool and die manufacture with emphasis on die design and power press nomenclature, safety power press die sets, die components terminology, elementary die construction theory, and principles of progressive and compound dies.

***63L TOOL AND DIE TECHNOLOGY PRACTICE (5)**

Five three-hour periods per week.

Prerequisites: M.T.T. 62, 62L.

Fundamental practice in the design and manufacture of die sets, blanking and piercing operations, bending, deforming and shearing operations.

***79 PRINCIPLES OF MACHINE TOOL MANUFACTURING (2)**

Two lecture hours per week.

Prerequisites: None.

A course in basic tool operations and set-ups for machine tools, welding, and quality control as used in manufacturing processes. Applications and theory of operations are demonstrated and discussed. Not open to machine tool or welding technology majors.

§101 APPLIED MACHINE SHOP MATHEMATICS (3)

Three lecture hours per week.

Prerequisites: Two years of high school work in Algebra, Geometry and Trigonometry desirable.

Areas, volumes, logarithmic calculations, slide rule calculations, weight. Fundamentals of algebra through quadratics, calculations of irregular areas and volumes, use of plane trigonometry.

§102a-102b MACHINE SHOP THEORY AND PRACTICE (3-3)

Two one-hour lecture periods and two 1½-hour lab periods per week.

*Day only.

§Evening only.

Prerequisite: 102a—None; 102b—M.T.T. 102a.

Theory and operation of the six fundamental machine processes of turning, drilling, shaping, planing and grinding, and the care and use of measuring tools.

§122a-122b TOOL AND DIE THEORY (3-3)

Three lecture hours per week.

Prerequisites: Satisfactory completion of M.T.T. 102a-b.

The theory of production tools, including the construction of shearing, forming, and progressive dies. The main emphasis is in the actual fabrication of tools and the production of the components made with the dies.

§140 INTRODUCTION TO MANUAL NC PARTS PROGRAMMING (2)

Three hours per week.

Prerequisite: Post high school machine tool course or related industrial experience.

Actual training in programming NC tools. Concentrates on point to point machine tools with some exposure to contouring.

§150 ADVANCED MANUAL NC PARTS PROGRAMMING (2)

Three hours per week.

Prerequisite: Satisfactory completion of M.T.T. 140.

Skill development in programming two-, three- and four-axis NC milling machines in point to point and contouring (profil-ing).

§160 COMPUTERIZED NC PARTS PROGRAMMING (2)

Three hours per week.

Prerequisite: M.T.T. 140.

Initial experience in using computers to create center-line programs and post processed programs from computer program languages. Includes APT and others. Intended to enable students to gain sufficient proficiency to qualify for positions as parts programmers capable of using such languages as APT.

Management

A planned series of courses are offered by the College leading to certificate in Business Management. Although a plan considered complete in itself, credits earned may be applied toward the Associate in Arts degree. Twenty units or more in the Management Program will satisfy the major requirements for the Associate in Arts degree. The certificate program is based upon 24 units in eight courses. For complete

details, consult the Management brochure available at the Information Office in the Administration Building.

§50 FINANCIAL MANAGEMENT (3)

Three class hours per week.

(Bus. 1a and 1b may be substituted.)

A general survey of accounting principles and practices, emphasizing the interpretation of accounting data and financial statements as management tools. The basic concepts of both general accounting and cost accounting are developed during the first two-thirds of the course. The topics are budgetary control, financial statement interpretation, limitations of accounting. Other phases of management systems are considered during the remainder of the time.

§52 REPORT WRITING (3)

Three class hours per week.

A study of the principles of effective communication in a variety of business and industrial applications; clarity, accuracy and logic are emphasized in the presentation of written, verbal and statistical materials.

§54 MANAGEMENT COMMUNICATIONS (3)

Three class hours per week.

Problems in communications in business and industry. Lectures, discussion and oral presentations will cover such matters as motivational bases of communications, listening skills, conference leading, and other written and verbal communication problems.

§55 DYNAMICS OF GROUP COMMUNICATIONS (3)

Three class hours per week.

Prerequisite: Mgmt. 54, or permission of the instructor.

Development of understanding and skill in interpersonal communication in business and industrial groups. Students work in problem-solving groups for experimental learning. Group process theory discussed.

§61 INDUSTRIAL RELATIONS (3)

Three class hours per week.

A general course giving employer and union policies affecting the labor market. The following will be emphasized: wage systems, living conditions, productivity of the worker, unemployment, development of union organizations and collective bargaining. The adjustment of industrial conflicts will be dealt with from the point of view of wage earner, employer and the government.

§63 PLANNING, BUDGETING AND CONTROL FOR SUPERVISORS (3)

Three class hours per week.

§Evening only.

This is a course in planning, budgeting and control for first- and second-line supervisors and managers. Covered are areas such as: project planning techniques including project definition, work breakdown structure, project goals, scheduling systems (such as Gantt charts, PERT, CPM and Milestone charts), cost estimating and cost curve displays; initiating action; performance reporting; department budgeting; corrective action techniques.

§65 BUSINESS AND INDUSTRIAL ECONOMICS (3)

Three class hours per week.

(Econ. 1a and 1b may be substituted.)

A survey of the economic aspects of the American economy. Development of a market society, role of money, public policy and economic matters, income and employment.

§71 MATERIALS MANAGEMENT (3)

Three class hours per week.

This course is designed to show how large and small businesses plan and control production in order to achieve competitive pricing of goods and services. Planning and scheduling, material and inventory planning, flow control, mechanical tabulation, identification systems.

§72 MOTION STUDY AND METHODS ANALYSIS (3)

Three class hours per week.

Techniques for finding the most economical way of doing a manual task and for measuring labor accomplishment. Application of time and motion study to lower cost production through better methods, procedure, tooling, product design and the elimination of wasteful practices and motions.

§77 INDUSTRIAL ENGINEERING METHODS (3)

Three class hours per week.

Overall view of manufacturing management. Fundamentals of organization, capital costs and budgets, motion and time study, industrial statistics, operations, research.

§80 MANAGEMENT OF HUMAN RESOURCES (3)

Three class hours per week.

An introductory course designed for line supervision to develop understanding of the personnel function as it relates to industry; selection and placement; wage and salary procedures; training and evaluation. This course can also serve as a first course for persons interested in working in the personnel field.

§85 ORGANIZATIONAL BEHAVIOR (3)

Three class hours per week.

The application of psychological principles to the supervisor's job including the cause of job satisfaction and its influences on production. A consideration of employment, training, placement, attendance control, merit rating, dismissal and similar items will be included.

§90 OFFICE MANAGEMENT AND PROCEDURES (3)

Three class hours per week.

The primary objectives of this course are to identify for the student the functions of the office manager, the office manager's contribution to the growth of corporate profit and the responsibilities and problems of the office manager. A secondary objective is to instruct the student in the specific techniques of the office manager, especially with respect to methods and office equipment. The course is intended to provide a combination of vocational training and business theories to upgrade the skills of the student in the field of office management.

§91 SALES MANAGEMENT (3)

Three class hours per week.

Sales organizations; sales, merchandising and distributive policies; layout of sales territories, selection and training of the sales force; pricing, use of advertising and sales promotion materials. The integration of the points of view of sales and merchandising managers in approaching and solving problems.

§92 TECHNIQUES OF SUPERVISION (3)

Three class hours per week.

Designed to improve the student's skill in working with people. An analysis of the objectives and characteristics of good management. Leadership and creativity in supervision. Effective communications.

§93 LEADERSHIP IN ORGANIZATION (3)

Three class hours per week.

To introduce managers to the motivational aspects of leadership. To examine how individuals react to different styles of leadership. Students will also examine their own management practices and beliefs, and gain insights into how these might be improved.

§94 CREATIVE PROBLEM SOLVING (3)

Three class hours per week.

Analysis of the processes involved in problem solving and decision making, with particular emphasis on the application of these concepts to real job situations.

§96 ORGANIZATION FOR MANAGEMENT (3)

Three class hours per week.

§Evening only.

*Day only.

A basic course describing the development of scientific management in modern business. Current trends in management, staffing, planning and controlling.

§99 INTRODUCTION TO BUSINESS MANAGEMENT (3)

Three class hours per week.

(Satisfies Bus. 10 requirement for A.A. degree in Business.)

A survey of business principles and practices, problems, and procedures, history of American business, organization, ownership, financing, production and distribution of goods.

Should be taken first for Management certificate.

§105 SUPERMARKET MANAGEMENT (3)

Three class hours per week.

Basic economic organizational and operating principles of the food industry. Historical development, role of trade groups, departmental operations, food industry issues, scheduling, security, sanitation, cash control, supply control, customer service.

§111 PUBLIC ADMINISTRATION MANAGEMENT (3)

Three class hours per week.

Designed to give the student a basic understanding of principles and concepts underlying the generic field of public administration in federal, state and local governments—line-staff, span of control, responsibility, accountability.

Manufacturing Technology

***52 ELECTRONIC AND MECHANICAL ASSEMBLY TECHNIQUES (BASIC) (2)**

One lecture and three lab hours per week.

Required of all first semester Electronics majors.

Basic hand skills required of electronics and assembly personnel. Familiarization with fabrication and assembly techniques typical of the electronics industry, with heavy emphasis on quality workmanship.

***53 ELECTRONIC AND MECHANICAL ASSEMBLY TECHNIQUES (ADVANCED) (2)**

One lecture and three lab hours per week.

Required of all second semester Electronics majors.

Prerequisite: Satisfactory completion of M.T. 52.

Continuation of instruction in fabrication and assembly techniques, with emphasis on more advanced skills. Instruction in electronic unit design and fabrication of printed circuits.

***54 MANUFACTURING MATERIALS (2)**

Two lecture hours per week.

Various types of materials used in manufacturing and their applications. Techniques in the use of these materials in processing and fabrication. Materials include all basic metals, many alloys, ceramics, plastics, wood and concrete.

***55 BASIC MANUFACTURING PROCESSES (4)**

Two lecture and two three-hour lab periods per week.

Instruction in the broad field of manufacturing, especially electronics. Emphasis on the manipulative skills with many types of manufacturing tools and equipment, both hand and power shearing, punching, fabrication of tool jigs, forming of materials, drilling, tapping, milling, soldering, brazing and welding.

***56 INTERMEDIATE MANUFACTURING PROCESSES (2)**

One lecture and one three-hour lab period per week.

Prerequisite: Satisfactory completion of M.T. 55.

Continued training in the skills of manufacturing processes. Work with various types of equipment used in manufacturing, such as engraving machines, lathes, mills, spray painters, metal finishing, treating and plating.

***62 ELECTRONIC PRODUCT DESIGN (BASIC) (2)**

One lecture and one three-hour lab period per week.

Prerequisite: Satisfactory completion of M.T. 53.

Directed toward the complete design and fabrication of simple electronic units and products. Numerical manufacturing processes are included, as necessary, to the successful completion of the product.

***63 ELECTRONIC PRODUCT DESIGN (ADVANCED) (2)**

One lecture and one three-hour lab period per week.

Prerequisite: Satisfactory completion of M.T. 62.

Continued instruction in the design of electronic products, units and systems. Heavy emphasis on quality workmanship, originality of design and mastery of numerous manufacturing processes.

***64 QUALITY CONTROL MEASUREMENTS (2)**

One lecture and one three-hour lab period per week.

The basic elements of quality control and measurements. Use of the instruments such as micrometers and surface plates, and practice of quality control measurements and inspections on units from allied areas such as machine tools technology, welding, aeronautics and electronics.

***65 SILK SCREEN PROCESSES (2)**

One lecture and one three-hour lab period per week.

*Day only.

Instruction in the broad area of screen process printing with development of fundamental skills in marking and identification as pertaining to advertising electronics and art, with additional emphasis on electronic applications.

***66 PRINTED CIRCUITS AND ADVANCED ELECTRONIC TECHNIQUES (2)**

One lecture and one three-hour lab period per week.

The techniques of printed circuitry as applied to the electronics field. All methods of production are covered, plus special problems such as microminiature and micrologic techniques.

Mathematics

The normal sequence of mathematic courses at CSM is 11, 12, 20, 21, 28, 30, 31, 32, 33, 34. A student who qualifies for a particular mathematics course is eligible for any course lower in sequence. If the student has not taken a mathematics course during the previous two years, it is strongly recommended that the student enroll in a course below the one for which he would normally be eligible.

In general, eligibility of an incoming freshman for a College of San Mateo mathematics course is determined by an evaluation of his transcript and the results of his CSM Placement Examination (SCAT).

Prerequisites for the various courses are detailed in the descriptions which follow. For certain courses an additional qualifying test may be required.

A student who wishes to enroll in Math. 32, 33, 34, and who has not had the prerequisite course at CSM must have the approval of the Department Chairman. Likewise, questions regarding equivalency of courses, transfer credit and the like, should be referred to the Chairman.

***10 INTRODUCTION TO MATHEMATICAL CONCEPTS (3)**

Three class hours per week.

The basic ideas of mathematics and their historical development; number, function, logic, sets; the relationship of traditional and contemporary mathematical thought. (Satisfies College of San Mateo General Education requirements in part.)

11 ELEMENTARY ALGEBRA (5)

Day—five class hours per week.

Evening—six class hours per week

Elementary Algebra through quadratic equations.

Satisfactory completion of this course will fulfill in part the mathematics entrance requirements of the universities.

11a-11b ELEMENTARY ALGEBRA (3-3)

Three class hours per week.

The two courses Math. 11a-11b are equivalent to Math 11.

12 GEOMETRY (5)

Day—five class hours per week. Evening—six class hours per week.

Prerequisite: Math. 11 with a grade of C or better, or one year of high school Algebra with grade of C or better.

A study of the properties of plane and solid figures, using formal logic and the real number system. Some non-Euclidean, projective and topological elements are included.

Satisfactory completion of this course will fulfill in part the mathematics entrance requirements of the universities.

13 ELEMENTARY FINITE MATHEMATICS (3)

Three hours of lecture per week.

Prerequisites: Math. 11 with grade of C or better or one year of high school Algebra with grade of C or better. A quantitative SCAT percentile of 35 or better, or Bus. 50, is also required.

An introduction to finite mathematics with attention to set theory, Boolean algebra, switching circuits, probability, systems of linear equations, vector and matrix notations and operations.

16 CONTENT OF ELEMENTARY SCHOOL MATHEMATICS (3)

Three class hours per week.

Development of the real number system by intuitive and semi-rigorous methods; discussion of sets, logic, axiomatics, systems of numeration, history and development of arithmetic, arithmetic processes, inductive and deductive reasoning.

Meets requirements of California Administrative Code, Title 5, Education, Section 6130(g).

***17 INTRODUCTION TO SYMBOLIC LOGIC (3)**

Identical to Philosophy 12. For prerequisite and content, refer to that course.

19 INTERMEDIATE ALGEBRA WITH REVIEW (5)

Day—five class hours per week.

Evening—six class hours per week.

Prerequisite: Math. 12 with grade of C or better, or high school preparation including one year of Algebra and one year of Geometry with grades of C or better.

Covers the same course material as Math. 20 but includes a review of material from Elementary Algebra.

20 INTERMEDIATE ALGEBRA (3)

Three class hours per week.

*Day only.

Prerequisites: Math. 12 with grade of C or better; or high school preparation including one year of Algebra and one year of Geometry.

Extension of fundamental algebraic concepts and operations, binomial expansion, solution of linear and quadratic equations individually and in systems, determinants, radical equations, complex numbers, introduction to theory of equations.

21 ANALYTIC TRIGONOMETRY (3)

Three class hours per week.

Prerequisites: Math. 19 or 20 (or equivalent) with grade of C or better; or high school preparation including two years of Algebra and one year of Geometry with grades of C or better.

Trigonometric functions of real numbers and angles, their graphs and periodicity; reduction formulas; functions of multiple angles; identities and equations; radian measure; inverse functions; logarithms; solution of triangles.

22 ELEMENTARY PROBABILITY AND STATISTICS (3)

Three hours of lecture per week.

Prerequisite: Math. 20 or equivalent with grade of C or better, or five semesters of high school mathematics with grades of C or better.

Treatment of finite probability models; random variables, expectation and variance; binomial, hypergeometric, normal and Poisson distributions; estimation, sampling, testing hypotheses.

23a-b APPLIED ANALYTIC GEOMETRY AND CALCULUS (4-4)

Day—four class hours per week.

Evening—five class hours per week.

Prerequisite: Math. 23a—Math. 21 (Trig.) with a grade of C or better, or high school preparation including two years of algebra, one year of geometry, and one semester of trigonometry with grades of C or better. 23b—Math. 23a with a grade of C or better.

A two semester sequence that will provide the business administration, architecture, forestry, behavioral and life science majors, and technology students with a working knowledge of the basic techniques of both differential and integral calculus. Selected topics from analytic geometry, limits, differentiation, summation forms, integration, partial derivatives, hyperbolic functions, Fourier series, applications. (This sequence of courses may not be substituted for the Math. 30 sequence for mathematics, physics or engineering majors.)

***25 INTRODUCTION TO NUMERICAL METHODS AND COMPUTER PROGRAMMING (3)**

Two one-hour lectures and one three-hour lab per week.

Prerequisite: Math. 27 or 28 (or equivalent) with a grade of C or better; or high school preparation including two years of Algebra, one year of Geometry and one semester of Trigonometry with grades of C or better.

Numerical methods applicable to modern electronic computers, including approximation of roots, solution of systems of equations, Newton's method, descriptive statistics, FORTRAN, and a brief introduction to other computer languages. Actual use of IBM 1620, Honeywell 200 and auxiliary equipment.

§25e INTRODUCTION TO NUMERICAL METHODS AND COMPUTER PROGRAMMING (2)

Three class hours per week.

Prerequisite: Math. 27 or 28 with grade of C or better; or high school preparation including two years of Algebra, one year of Geometry and one semester of Trigonometry with grades of C or better.

Numerical methods applicable to modern electronic computers, including approximation of roots, solution of systems of equations, Newton's method, descriptive statistics, FORTRAN, and a brief introduction to other computer languages. Actual use of IBM 1620, Honeywell 200 and related machines in the system. Hands-on computer time will be less than Math. 25.

27 COLLEGE ALGEBRA WITH TRIGONOMETRY REVIEW (5)

Day—five class hours per week.

Evening—six class hours per week.

Prerequisite: Math. 21 (or equivalent) with grade of C or better; or high school preparation including 1½ years of Algebra, one year of Geometry and one semester of Trigonometry with grades of C or better.

Covers the same course material as Math. 28 but includes a review of Trigonometry.

28 COLLEGE ALGEBRA (3)

Three class hours per week.

Prerequisites: Math. 21 (or equivalent) with grade of C or better; or high school preparation including 1½ years of Algebra, one year of Geometry and one semester of Trigonometry with grades of C or better.

A study of more advanced algebra including such topics as theory of equations, complex numbers, logarithmic and exponential functions, vectors, matrices, binomial theorem, sequences.

30 ANALYTIC GEOMETRY (4)

Day—four class hours per week.

Evening—five class hours per week (offered fall only).

§Evening only.

*Day only.

Prerequisites: Math. 27 or 28 with grade of C or better, or high school preparation including two years of Algebra, one year of Geometry and one semester of Trigonometry with grades of C or better.

Elements of plane and solid analytic geometry.

31-32-33 CALCULUS (4-4-4)

Day—four class hours per week.

Evening—five class hours per week.

Math. 31 and 33 offered spring semester only in the evening; Math. 32 offered fall semester only in the evening.

Prerequisites: To enroll in Math. 31, completion of Math. 30 (or equivalent) with grade of C or better. The student may then progress through this series of three courses if he continues to earn grades of C or better. If he earns a grade below C, enrollment in the next course is subject to approval of the instructor.

Development of the basic theory of Differential and Integral Calculus as applied to algebraic circular, hyperbolic, logarithmic and exponential functions; partial differentiation; multiple integration; infinite series.

34 ORDINARY DIFFERENTIAL EQUATIONS (3)

Three class hours per week.

Offered fall semester only in the evening.

Prerequisite: Math. 33 (or equivalent) with grade of C or better. When approved by the instructor, may be taken concurrently with Math. 33.

Differential equations of first, second and higher order; simultaneous, linear, homogeneous equations; solutions by power series; numerical methods, Fourier series, Laplace transform; applications.

***49 SPECIAL PROJECTS (1-2)**

Hours by arrangement.

Prerequisites: Math. 30 (or equivalent); permission of the instructor.

Directed individual study of a suitable topic in mathematics, or construction of a model useful in the study or teaching of mathematics.

55 PRACTICAL TRIGONOMETRY AND SLIDE RULE (3)

Three class hours per week.

Prerequisite: Math. 11 with a grade of C or better, or two semesters of high school level algebra with grades of C or better.

Brief review of algebraic operations, important geometric concepts and theorems, the trigonometric functions, solution of right and oblique triangles, logarithmic computations, the

slide rule, vectors and graphs. Representative problems from various fields.

Medical Assisting

§60a-b MEDICAL ASSISTING REVIEW (1-1)

Three class hours per week.

Prerequisites: Employment as a medical assistant and/or medical secretary, or permission of the instructor.

60a—Clerical Office Procedures. General review of clerical office duties performed in a medical office or in a hospital, including correspondence, transcription, insurance, telephone, basic bookkeeping, medical ethics and legal aspects.

60b—Medical Terminology and Clinical Procedures. Comprehensive review of medical terminology and the anatomical systems. Review of the clinical duties peculiar to a medical office, including sterilization techniques, laboratory and X-ray studies and physical examinations. Medical ethics will be discussed.

Meteorology

1 ELEMENTARY METEOROLOGY (3)

Three hours of lecture per week.

A descriptive course in elementary meteorology including the basic processes of weather phenomena, basic weather analysis and forecasting.

*10 AVIATION WEATHER (3)

Three hours per week for lecture, discussion and demonstration.

Prerequisite: Aero. 2a or consent of the instructor.

A study of the basic weather concepts and their special application to aviation. Designed to prepare the aviation student for the meteorology portion of the FAA pilots' examination.

Military Science (Reserve Officers' Training Corps)

*1a DEFENSE ESTABLISHMENT IN NATIONAL SECURITY (2)

One lecture hour and one leadership laboratory per week. Study of the history, mission and organization of ROTC,

techniques of marksmanship, causes of war, evolution of weapons, and factors of national power. Progressive training in leadership and command.

*1b DEFENSE ESTABLISHMENT IN NATIONAL SECURITY (2)

One lecture hour and one leadership laboratory per week.

Study of the principles of war; history, mission and organization of the Department of Defense; and introduction to leadership.

*12a BASIC TACTICS (2)

One lecture hour and one leadership laboratory per week.

Prerequisite: MS 1b.

Map and aerial photograph reading. Instruction in military operations and basic tactics. Progressive training in leadership and command.

*12b BASIC TACTICS (2)

One lecture hour and one leadership laboratory per week.

Prerequisite: Military Science 12a.

Continuation of Military Science 12a.

Music

The courses of the Music Department are designed for music majors or professional musicians and for general education students. Recitals by students and professional musicians are part of the program of the Music Department. Class attendance forms part of the requirement for music students.

Auditions: Eligibility for participation in all performing groups is determined by audition with the conductor.

*1a-1b MUSICIANSHIP (2-2)

Two hours per week; one lab hour per week.

Prerequisite: Music 9 or equivalent.

Includes the study of music notations, keys, key signatures, intervals; orchestral instruments, fundamentals of conducting, sight reading and ear training.

This course is required of Music majors.

*2a-2b ADVANCED MUSICIANSHIP (2-2)

Two hours per week.

Prerequisite: 1a-1b or equivalent.

§Evening only.

*Day only.

A continuation of Music 1a-1b. (Eight units of Musicianship are recommended for students majoring in Music.) Emphasis is on ear training and sight reading.

***3 HISTORY AND LITERATURE (3)**

Three lecture hours plus three hours required listening per week.

A basic survey for Music majors of the history and literature of the art of music, with particular attention paid to the development of style and form from the early Christian era to Contemporary times.

4a-4b HARMONY (3-3)

Three lecture hours per week.

Prerequisites: Music 9 or equivalent; Music 1a-1b (or equivalent), or taken concurrently. Music 4a is a prerequisite for Music 4b.

An introduction to the harmonic structure of music, developing the ability to harmonize melodies on paper or at the keyboard. 4a-4b carries the student from simple triads through and including chords of the dominant seventh. Keyboard harmony is a part of this course.

***5a-5b ADVANCED HARMONY (3-3)**

Three lecture hours per week.

Prerequisites: Music 4a-4b. Music 5a is a prerequisite for Music 5b.

First-, second- and third-class chords of seventh and ninth, altered chords and modulations, and arranging for various vocal and instrumental groups are considered, as well as the development of original compositions.

6 MUSIC LITERATURE AND APPRECIATION (3)

Three lecture hours plus three hours required listening per week.

An historical survey of the music of Western Civilization, emphasizing the techniques of listening and understanding of the art. A text, illustrated lectures and directed listening in the library indicate the procedure of the course.

This course is particularly for non-music majors and will help meet General Education requirements. It is required of State College elementary school majors.

***7 A SURVEY OF BLACK MUSIC (3)**

Three lecture hours per week.

A chronological survey of the various styles and salient elements of the music of the Afro-American, encompassing sociological as well as musical factors.

8 FUNDAMENTALS FOR THE CLASSROOM TEACHER (3)

Three lecture hours per week.

*Day only.

A study in the basic musical skills needed by the elementary classroom teacher. Voice, piano, theory, conducting, orchestral instruments, listening to and creating music, are subjects dealt with in this course.

***9 FUNDAMENTALS OF MUSIC (3)**

Five lecture hours per week plus three hours required listening in Audio Library.

A course designed to develop the contextual knowledge and aural recognition of notation and vocabulary of music as the necessary base for theoretical and performing skills in music.

***12 ELEMENTARY PIANO (1)**

Three class hours plus two lab hours per week.

A study in the techniques of piano playing. Individual attention, assignments and performance in a class situation.

***13 ADVANCED ELEMENTARY PIANO (1)**

Three class hours plus two lab hours per week.

Continuation of study in the techniques of piano playing. Individual attention, assignments and performance in a class situation.

***14 INTERMEDIATE PIANO (1)**

Three class hours plus two lab hours per week.

Continuation of study in the techniques of piano playing. Individual attention, assignments and performance in a class situation.

***15 ADVANCED PIANO (1)**

Three class hours plus two lab hours per week.

For advanced students. Recital performance is part of the course.

***17 COMPOSERS WORKSHOP (2)**

One lecture and two lab hours per week.

Prerequisite: Consent of the instructor.

The study of compositional style from Schoenberg to the present time with particular emphasis on dodecaphonic, electronic and aleatory techniques. Performances of student works are an integral part of the course.

May be repeated for credit.

***22 ORCHESTRA (1)**

Three hours per week.

Prerequisite: Eligibility by audition.

Study and performance of standard and contemporary literature for chamber and symphonic ensembles. Performance is required. May be repeated for credit. Wherever possible, students should enroll in Music 27S concurrently.

***23a-23b SYMPHONIC BAND (2)**

Five hours per week.

Prerequisite: Eligibility by audition.

Study and performance of music for concert band. Performance is required. Band does not perform at athletic events.

***24 STUDY OF BRASS INSTRUMENTS (1)**

Three class hours and three lab hours per week.

Techniques of playing the instrument of the student's choice, with individual instruction.

May be repeated for credit.

***25 STUDY OF WOODWIND INSTRUMENTS (1)**

Three class hours and three lab hours per week.

Technique of playing the instrument of the student's choice, with individual instruction.

May be repeated for credit.

***26 STUDY OF STRINGED INSTRUMENTS (1)**

Three class hours and three lab hours per week.

Technique of playing the violin, viola, cello or string bass, with individual instruction.

May be repeated for credit.

***27 INSTRUMENTAL ENSEMBLE (1)**

Three hours per week.

Prerequisite: Eligibility by audition.

Performance is required.

May be repeated for credit.

***28 JAZZ BAND (2)**

Prerequisites: Eligibility by Audition.

An advanced course which includes organization, training procedures, arranging, vocals and other phases of dance band work. Performance is required. Course credit is transferable to many four-year colleges.

§29 WIND ENSEMBLE (1)

Three hours per week.

Prerequisite: Eligibility by audition.

Study and performance of wind instrument literature written by major composers.

May be repeated for credit.

*Day only.

§Evening only.

***33 A CAPPELLA CHOIR (2)**

Five hours per week.

Prerequisite: Eligibility by audition.

Study and performance of choral literature for accompanied and unaccompanied choir. Performance is required.

May be repeated for credit.

***34 COLLEGE CHORALE (1)**

Three hours per week.

Prerequisites: Eligibility by audition; concurrent registration in Music 33.

An advanced ensemble which specializes in the performance of choral literature appropriate for small choir. Members are selected by audition from the enrollment of the A Cappella Choir. Performance is a part of the course.

May be repeated for credit.

***36 ELEMENTARY SOLO VOICE (1)**

Three class hours plus two lab hours per week.

Elementary vocal problems analyzed and corrected through exercises and songs.

May be repeated for credit.

***37 ELEMENTARY SOLO VOICE (1)**

Three class hours plus two lab hours per week.

Vocal problems analyzed and corrected through exercises and songs.

***38 INTERMEDIATE SOLO VOICE (1)**

Three class hours plus two lab hours per week.

Advanced songs and recital performance as ability merits.

***39 ADVANCED SOLO VOICE (1)**

Three class hours plus two lab hours per week.

A performance course, emphasis on the study and performance of lieder, arias and other classical vocal literature.

May be repeated for credit.

***41 MUSIC RECITALS (½)**

One class hour per week.

Open to all students.

A listening course to acquaint students with musical literature as performed by professional musicians and advanced students in the area.

Music Majors are required to complete four semesters.

Nursing (A.A. Degree)

The courses described are open only to those students accepted in the nursing program. A grade of C or higher is necessary for progression in the sequence. Upon graduation, the candidate receives an Associate in Arts degree and is eligible to write the California State Board examination for Registered Nurses.

*NURSING 1 (7)

Four lecture hours and nine lab hours and four Skills Lab hours per week.

Prerequisites: Registration in the Associate in Arts Degree Nursing Program and concurrent enrollment in Biology 41 and Psychology 1a.

Principles and practices in the fundamentals of nursing which are common to all patient conditions. Common human needs and health needs of normal as well as sick individuals are considered. Correlated clinical practice with the subacute and chronically ill is offered concurrently with the lectures. Skills labs are an integral part of the course.

*NURSING 2 (7)

Four lecture hours and nine lab hours per week.

Prerequisites: Nursing 1, Anatomy and Physiology 2, both with a grade of C or better, and concurrent enrollment in Biology 42 and Psychology 5.

Designed to develop knowledge and understanding of human behavior and growth and development of the child and the family. The focus will be on nursing care related to the adaptations to stress during the growth and development cycle, during the maternity cycle and during emotional illness. Theory and clinical experience are correlated. Principles of growth and development, mental health, homeostasis and nutrition are correlated. Skills labs are an integral part of the course.

*NURSING 3 (8)

Four lecture hours and twelve lab hours and two Skills Lab hours per week.

Prerequisites: Nursing 2, Biology 42 and Psychology 5 with a grade of C or better.

Beginning nursing care of patients with illnesses common to adults requiring medical and/or surgical interventions. Preventive, therapeutic, pharmacological, nutritional and rehabilitative aspects of these conditions. Principles of growth and development, mental health and homeostasis are correlated. Skills labs are an integral part of the course.

*NURSING 4 (8)

Four lecture hours and 12 lab hours per week.

*Day only.

Prerequisite: Nursing 3 with a grade of C or better.

Correlated theory and clinical experience in nursing of patients with acute conditions requiring medical and/or surgical intervention including long-term care and rehabilitation. Preventive, therapeutic, pharmacological, nutritional and rehabilitative aspects of these conditions. Principles of growth and development, mental health and homeostasis are correlated. Skills labs are an integral part of the course.

Nursing (Medical Assisting)

*60 MEDICAL ASSISTING (3)

Three hours of lecture and discussion per week.

Assisting with procedures commonly done in a doctor's office and clinic. Principles of asepsis, radiation protection, Harrison Drug Act and medical ethics will be discussed. Health needs of individuals and the roles of health team members are covered.

Nursing (Vocational)

*51 MEDICAL-SURGICAL NURSING I (7)

Five hours of lecture and six hours of lab.

Prerequisites: Registration in Vocational Nursing curriculum and concurrent enrollment in Biology 53, Nursing I and Psychology 1a.

Correlation of theory and laboratory experience in chronic and subacute medical and surgical conditions of adults and children. Principles of growth and development, mental health and the maternity cycle are included.

*52a MEDICAL-SURGICAL NURSING II (15)

Seven hours of lecture and twenty-four hours of lab.

Prerequisites: Grades of C or better in V.N. 51, Nursing I, Psychology 1a and Biology 53 (Anatomy 51) and concurrent enrollment in Biology 52.

A continuation of V.N. 51 with experience in more complex medical-surgical nursing situations and including the care of the mother and newborn. The role of the vocational nurse as a member of the health team is emphasized.

*52b MEDICAL-SURGICAL NURSING III (9)

Four hours of lecture and 36 hours of lab.

Prerequisites: Grades of C or better in V.N. 52a and Biology 52 (Bacteriology 61).

A continuation of V.N. 52a.

Paleontology

*1 GENERAL PALEONTOLOGY (3)

Two lecture hours and two recitation hours per week.

A survey of the history and classification of plants and animals. Methods of interpretation of the fossil record. Fossils as evidence of the history of life; past extinctions of major life groups as evidence for man's future; evolution of form and structure in plants and animals; sequence of floras and faunas in the rocks, including a brief summary of fossil men and human evolution.

Philosophy

6a INTRODUCTION TO SOCIAL AND POLITICAL PHILOSOPHY (3)

Three hours of lecture per week.

A study of philosophical methods and attitudes; a critical evaluation of selected political and social ideologies, and views concerning the nature of man, the physical world and God.

May be repeated for credit.

6b INTRODUCTION TO THEORY OF KNOWLEDGE (3)

Three hours of lecture per week.

A critical study of the possible sources and limits of human knowledge; the ability of sense experience, reason, revelation, faith, intuition to provide us with reliable information about nature, ourselves and God; their role in establishing moral, religious and aesthetic convictions.

May be repeated for credit.

7 INTRODUCTION TO LOGIC (3)

Three hours of lecture per week.

Conditions of clear statements; procedures and criteria for evaluating arguments with attention to both their content and their form; questions of the adequacy and relevance of statements used to support conclusions.

Recommended as a valuable General Education course for students in any field.

May be repeated for credit.

*8 LOGIC: SCIENTIFIC METHOD (3)

Three hours of lecture per week.

Familiarizes the student with the scientific method in the physical, biological, and social sciences. Inductive inference;

hypothesis formulation and testing; analogy; probability; causality; verification; nature of scientific explanation. (Recommended for physical science and social science majors.)

May be repeated for credit.

*12 INTRODUCTION TO SYMBOLIC LOGIC (3)

Three hours of lecture per week.

A study of the logical structure of language, the validity of arguments expressed symbolically. Introduction to the logic of classes and relations. Introduction to the logic of mathematics.

Identical to Math. 17.

Recommended for Philosophy and Mathematics majors.

May be repeated for credit.

20a HISTORY OF PHILOSOPHY (3)

Three hours of lecture per week.

A study of Greek philosophy with emphasis on Pre-Socratic philosophers, Socrates, Plato and Aristotle; philosophy of the Roman world, and the development of Christian philosophy in the Middle Ages.

May be repeated for credit.

20b HISTORY OF PHILOSOPHY (3)

Three hours of lecture per week.

A study of the thought of the Renaissance and the rise of modern science, of continental rationalism in Descartes, Leibnitz, Spinoza, and of the opposing tradition of British empiricism and the critical philosophy of Kant.

May be repeated for credit.

20c HISTORY OF PHILOSOPHY (3)

A study of 19th and 20th Century philosophical positions including those of Kant, Hegel, Nietzsche, Schopenhauer, the Utilitarians, Pragmatists, Logical Positivists, Existentialists and contemporary Analytic Philosophers.

May be repeated for credit.

23 ETHICS (3)

Three hours per week.

A study of the leading theories of moral principles and ideals and their application to typical problems of institutional behavior, life, property and the family. Among the topics discussed will be the concept of the good, duty, egoism, altruism, freedom, personal social responsibility.

May be repeated for credit.

24a INTRODUCTION TO RELIGION, RELIGIONS OF THE WORLD (3)

Three hours of lecture per week.

An introductory course describing the content and meaning of the great religions of the world; their cultural background, history and development, cultic practices, basic moral-religious tenets, literature and art, and their impact on the society and culture of which they are a part.

May be repeated for credit.

24b INTRODUCTION TO RELIGION, PHILOSOPHY OF RELIGION (3)

Three hours of lecture per week.

An investigation of the questions relating to the existence of God, including appeals to rational arguments, revelation, miracles, authority, faith, mystical experience; the nature of God and the problem of evil; the relationship between religion and moral convictions, and between religion and science; the problem of immortality.

May be repeated for credit.

***49 SPECIAL PROJECTS (1-2)**

Prerequisites: Sophomore standing, three units in Philosophy and consent of the Social Science Division Chairman.

Special supervised study in depth of the writings of a particular philosopher or a specific problem in philosophy. A paper or written report will be required at the end of the semester.

May be repeated for credit.

51 VALUES IN THE MODERN WORLD (3)

Three lecture hours per week.

Relates the ideas and methods of great social and ethical thinkers to contemporary life and personal situations. Classroom inquiry helps develop skills of critical reading, thinking on topics such as the conflicts between the individual and the state, freedom and authority, religion and conscience. The application of scientific methods to solving social and ethical problems.

May be repeated for credit.

§52a-52b PHILOSOPHY FOR A SCIENTIFIC AGE (3-3)

Three lecture hours per week.

A cross-disciplinary survey of the scope, logic, method, history and philosophy of science as a cultural enterprise as well as of the outstanding achievements of the scientific method in the various natural and social sciences.

May be repeated for credit.

Physical Education (Men)

Department Requirements: Students registered in a Physical Education class who claim exemption by reason of

*Day only.

§Evening only.

physical disability must present the C.S.M. adapted form properly completed by their physician. The Physical Education class must be attended until the disability is verified and the student given specific instructions as to procedure.

The Department of Physical Education for Men of the College of San Mateo operates under the State Law of California, which requires each regularly registered student to participate in physical education activities. In accordance with the provisions of the School Code, all men students, except those physically disabled or otherwise excused, are required to attend the regularly organized courses in physical education for not less than two hours each week that school is in session.

It is the philosophy of the Physical Education Division that all students involved in activity courses have a diversified experience in physical education. Therefore, students will be programmed in such a manner as to give them a broad variety of activities. Counselors will require students to participate in several areas, drawing from aquatics, rhythmic, individual sports, team sports, gymnastics or combatives. Students may not repeat a class activity without the permission of the physical education faculty.

VARSITY SPORTS

These courses are designed for those students who desire to compete in intercollegiate athletics and may be limited to those who present the necessary physical and mental fitness. Sufficient skill to reduce the likelihood of injury is also required. The passing of medical and physical examinations and the consent of the coach are necessary before enrollment. Varsity awards are granted.

Most varsity sports entail practice from 2-5 p.m. daily.

***3 VARSITY FOOTBALL (1)**

Prerequisite: Permission of the instructor.

Intercollegiate varsity football competition in the Golden Gate Conference.

***4 VARSITY CROSS COUNTRY (1)**

Prerequisite: High school track or cross country experience or permission of the instructor.

Cross country and distance running competition on an intercollegiate level in the Golden Gate Conference; participation in Conference meets, invitational meets, Northern California meets and State Championship for those who qualify.

***5 VARSITY BASKETBALL (1)**

Prerequisite: Permission of the instructor.

Intercollegiate varsity basketball competition in the Golden Gate Conference; participation in regional tournaments.

***6 VARSITY WRESTLING (1)**

Prerequisites: Varsity wrestling experience in high school or junior college and permission of the instructor.

Intercollegiate competition in dual matches in the Golden Gate Conference; competition in four tournaments each year including the California State Junior College Tournament; instruction in the more advanced skills of wrestling.

***7 VARSITY TRACK AND FIELD (1)**

Prerequisite: High school track or cross country experience or permission of the instructor.

Track and field competition in the Golden Gate Conference on an intercollegiate basis; participation in Conference meets, invitational meets, Northern California Finals and the State meet for those who qualify.

***8 VARSITY BASEBALL (1)**

Prerequisite: Permission of the instructor.

Intercollegiate varsity baseball competition in the Golden Gate Conference tournament and with other junior colleges in this area.

***9 VARSITY TENNIS (1)**

Prerequisite: Permission of the instructor.

Intercollegiate varsity tennis competition in the Golden Gate Conference; participation in the Conference championships, and participation in the Northern California and State championships for those who qualify.

***10 VARSITY GOLF (1)**

Prerequisites: Consent of the instructor; open to advanced golfers who have played in inter-school competition.

Intercollegiate varsity golf competition in the Golden Gate Conference; participation in the Western Junior College Intercollegiate Tournament and State championships for those who qualify.

***11 VARSITY SWIMMING (1)**

Prerequisite: Consent of the instructor.

Intercollegiate varsity swimming competition in the Golden Gate Conference, Northern California and State Junior College swimming championships.

***12 VARSITY SOCCER (1)**

Prerequisite: Consent of the instructor.

Intercollegiate soccer competition with Northern California junior colleges and colleges.

***13 VARSITY WATER POLO (1)**

Prerequisite: Consent of the instructor.

*Day only.

Intercollegiate competition in the Golden Gate Conference, Northern California Championships, and the State Junior College Championships.

***14 VARSITY GYMNASTICS (1)**

Prerequisite: Consent of the instructor.

Intercollegiate competition in gymnastics.

INTRAMURALS

Supervised intramural sports are scheduled throughout the semester Tuesday and Thursday at 11 a.m.

Competition in selected seasonal activities for all men students: flag football, basketball (3- and 5-man leagues), tennis, table tennis, badminton, volleyball and softball. (No credit granted.)

AQUATICS

***1 INTERMEDIATE SWIMMING (½)**

Prerequisite: The ability to swim 25 yards in deep water using any stroke.

Progressive skill development in elementary back stroke, side stroke, breast stroke, crawl, turning, back float, sculling, treading water, swimming under water, simple front diving. Also, water knowledges including personal safety in swimming, elementary forms of rescue.

***1 WATER POLO (½)**

Prerequisites: The ability to swim 50 yards using a "head high" crawl stroke, to swim 50 yards using the breast stroke, to tread water for 3 minutes and to tread water for 1 minute with the hands out of the water.

Progressive skill development in picking up a ball in the water, passing, receiving, shooting, dribbling and playing the game of water polo. Knowledge of water polo rules and simple facets of water safety.

COMBATIVES

***1 ELEMENTARY BOXING (½)**

Designed to give the student knowledge of the basic skills in boxing. There will be drills on the stance, six types of blows and the defenses for these blows. These techniques will be applied in actual boxing in the class with students wearing protective headgear.

***1 ELEMENTARY WRESTLING (½)**

Designed to introduce the student to intercollegiate wrestling through instruction in the rules, scoring system, and skills. Fundamental stances, take downs, escapes, reversals, breakdowns, rides and pinning combinations. After learning these skills, the student will be able to apply them in short periods of wrestling.

***1 ADVANCED WRESTLING (½)**

Prerequisites: Elementary wrestling at C.S.M. or at least one year of varsity wrestling in high school.

More advanced skills as applied to intercollegiate wrestling. Further instruction in take downs, escapes, reversals, break-downs, rides and pinning combinations. Competition will be offered in dual competition and a tournament within the class.

***1 ELEMENTARY JUDO (½)**

Prerequisite: Beginners only.

An elementary course in judo for the beginning student. Consideration is given to the rules, procedures, techniques of falling, unbalancing, throwing techniques, combination techniques as related to physical development. The emphasis of this class is on judo as a sport.

***1 ADVANCED JUDO (½)**

Prerequisite: Permission of the instructor.

A continuation of skills learned in Elementary Judo. Advanced attacks and defenses are demonstrated and practiced. Consideration is given to judo as an "art," with emphasis upon maximum use of the mind and the body.

CONDITIONING***1 ROPE ACTIVITIES (½)**

Vertical rope climbing activities and rope skipping, progressing development in 17 climbing skills, explanation and development of safety skills, evaluation program which includes climbing for speed, advanced techniques and progressive tests in various forms of rope skipping.

***1 FITNESS ACTIVITIES (½)**

For the student who desires a course in regular and vigorous activity. Tests are given regularly relating to motor fitness, speed, balance, strength, endurance, flexibility, power. Considerable running activity is done. Several college fitness batteries are utilized.

***1 TRAMPOLINE (½)**

Trampoline activity for elementary, intermediate and advanced students. Safety skills and fundamental processes of rebound tumbling are taught in the following phases:

Phase I: Fundamental bounces, checks, drops, simple combinations, turns, twists and somersaults.

Phase II: Continuance of activities of Phase I plus combinations of front and back somersaults and other intermediate movements.

Phase III: For advanced students interested in the development of techniques in twisting somersaults, advanced routines, trick skills and double-teaming.

*Day only.

***1 ELEMENTARY TUMBLING (½)**

The beginning skills of tumbling. Attention is given to tumbling procedures and format, all elementary stunts and activities; some doubles activity is provided; group participation in pyramids.

***1 ELEMENTARY GYMNASTICS (½)**

Prerequisite: Successful completion of a tumbling course at C.S.M. or permission of the instructor.

A course for elementary students in a combination of gymnastic activities including rebound tumbling, tumbling, horizontal bar, vaulting buck, long horse, parallel bars, rings and mini-tramp.

INDIVIDUAL SPORTS***1 ELEMENTARY BADMINTON (½)**

The rules and strategies of badminton as well as the fundamentals of grip, strokes, footwork and court coverage through drills and competition; testing program in the various techniques taught; tournaments in singles and doubles are held within the class period.

***1 ADVANCED BADMINTON (½)**

Prerequisite: Consent of the instructor or completion of the elementary course in the top ability group.

Advanced techniques through drills and round-robin tournaments in singles and doubles play.

***1 ELEMENTARY BOWLING (½)**

Learning opportunities in the stance, approach, release and roll; participation in a league bowling situation; knowledge of rules, scoring and etiquette.

Approximate cost per student is \$18 per semester. Students must provide own transportation.

***1 ADVANCED BOWLING (½)**

Prerequisite: 165 blue book average in an A.B.C. bowling league or permission of the instructor.

Participation in advanced league bowling competition; individual scoring statistics are maintained.

Approximate cost per student is \$18 per semester. Students must provide own transportation.

***1 ELEMENTARY GOLF (½)**

Elementary instruction concerning the techniques, rules, etiquette and philosophy for the beginning golfer. Stance, grip, position, swing and follow-through as associated with selected iron and wood shots.

***1 ISOMETRICS AND RUNNING (½)**

Instruction in, and conditioning through basic isometric exercises and running activities; also use of isometric exercises for individual programs.

***1 ELEMENTARY TENNIS (½)**

Instruction in the fundamental skills of the service, forehand and backhand strokes; court strategy and the rules of play; testing program in all tennis skills and rules.

***1 ADVANCED TENNIS (½)**

Prerequisite: Permission of the instructor.

Advanced aspects of tennis play. Instruction in advanced techniques; ladder play in singles and doubles; testing program in skills and techniques.

***1 ELEMENTARY HANDBALL (½)**

Basic handball skills involving serving and strokes. Features in doubles competition including theory and strategy. Understanding of the rules pertaining to one-wall handball will be stressed.

***1 ELEMENTARY PADDLE BALL (½)**

Basic paddle ball skills involving the serve, forehand and backhand strokes. A thorough understanding of the rules and strategy of the game is provided. Tournament play is offered in one-wall doubles.

***1 ELEMENTARY WEIGHT CONDITIONING (½)**

A basic course of weight conditioning designed to build and strengthen the body; also instruction in the various bar-bell exercises and associated safety procedures.

***1 INTERMEDIATE WEIGHT CONDITIONING (½)**

Prerequisite: Successful completion of elementary weight conditioning at C.S.M. or permission of the instructor.

Progressive skill and weight development in various weight conditioning exercises; opportunities to specialize in different areas of the body; development of individual programs.

***1 INDIVIDUAL PROGRAMS IN WEIGHT CONDITIONING (1)**

Three days per week.

Prerequisites: Previous experience in weight training or permission of the instructor; statement of a goal for which the course is being taken.

Vigorous weight training in an individual program of exercises designed to build specific strength with regard to each student's goal.

*Day only.

***1 CIRCUIT TRAINING (½)**

Vigorous group weight training exercises set up in training "stations." Individuals rotate from station to station on a specific time schedule. Emphasis is not on strength, but on over-all body conditioning.

TEAM SPORTS

***1 ADVANCED BASKETBALL (½)**

Prerequisite: Playing experience in high school on either "B" or varsity level.

Advanced skills of basketball play; some continuance of elementary skills; advanced techniques of offensive and defensive play; round-robin team play; evaluation on knowledge of rules and testing program on all skills taught.

***1 ELEMENTARY SOFTBALL (½)**

Fundamentals and play situations of softball; students participate in game situations and round-robin play; testing on rules and all skills presented.

***1 SOCCER (½)**

For the beginning or elementary student; basic fundamentals of individual play such as dribbling, heading, shooting, trapping, passing and defensive tactics; participation in game situations; testing program in all soccer skills and knowledge of rules.

***1 ELEMENTARY VOLLEYBALL (½)**

Instruction in the fundamentals of serving, passing, setting and spiking; team competition under National and International rules of play; testing program in all skills taught and on knowledge of rules.

***1 RUGBY (½)**

For the beginning or elementary student; basic fundamentals of individual play; participation in game situations; testing program in rugby skills and knowledges.

***1 ADVANCED VOLLEYBALL (½)**

Prerequisite: Permission of the instructor.

Volleyball play for advanced volleyball students of superior ability; continuation of the fundamental skills; advanced emphasis upon team play and strategy; tournament play is offered.

COMPETENCIES

***30a-b-c-d PHYSICAL EDUCATION COMPETENCIES (2-2-2-2)**

A series of planned activities designed to assist those students majoring or minoring in Physical Education or Recreation to attain the skill level necessary to pass the upper division skill competency requirements of the four-year colleges

and universities. Activities include aquatics, team sports, combatives, gymnastics and individual sports.

THEORY

*41 THE THEORY OF SPORTS OFFICIATING (1)

Two lecture hours per week plus lab hours.

A course designed for Physical Education men majors. Treatment is given to officiating procedures in football, basketball, track and field, baseball, wrestling, water polo, swimming and soccer. Students participate in a laboratory experience of officiating in all these activities. Assignments are given as related to the intramural and physical education instructional program.

Physical Education (Co-ed)

*40 THE NATURE AND SCOPE OF PHYSICAL EDUCATION (2)

Two lecture hours per week.

A parallel course to Introduction to Physical Education which is offered in the four-year institutions. This course represents a detailed treatment of academic and professional requirements for physical education, development of aims, objectives and philosophies. Students are required to prepare a term paper, participate in panel discussions, symposiums and subjective testing.

*2 ADAPTED SPORTS (½)

Prerequisite: Physician's recommendation or assignment by the college nurse, division head, or the instructor.

Concepts of fitness including corrective exercises. Fundamental skills and rules for shuffleboard, volleyball, croquet and horeshoes. Program geared to individual student needs.

*2 INTERMEDIATE/ADVANCED BADMINTON (½)

Prerequisite: Elementary Badminton or permission of the instructor.

Emphasis placed on strategy, tactics, footwork, doubles teamwork and the singles game.

*2 ELEMENTARY FENCING (½)

Elementary techniques and practice in the sport of fencing including form, attacks, parries, counter-attacks, timing and strategy. Also included are the following elementary knowledges: history, safety, etiquette, rules, terminology, judging, directing and score keeping.

*2 INTERMEDIATE/ADVANCED FENCING (½)

Prerequisite: One semester of fencing.

*Day only.

An extension of the Beginning Fencing course; more concentration on the development of timing, strategy and the more advanced and finer points of technique.

*2 ELEMENTARY BALLET AND MODERN DANCE (½)

Beginning techniques of both ballet and modern dance are studied and executed. Movement skills, rhythmic structure of dance, qualities of movement, spatial design and an appreciation of dance are presented. The modern ballet and modern dance styles are emphasized in the creation of individual compositions.

*2 ELEMENTARY JAZZ AND MODERN DANCE (½)

Beginning techniques as explained in the Elementary Ballet and Modern Dance course. However, the expression and suggestion of slow and fast jazz and the inner expression of modern dance are emphasized.

*2 DANCE PRODUCTION (½ Fall, 1 Spring)

Prerequisite: Elementary Modern Dance or instructor's permission.

The intermediate and advanced dancer will become familiar with all types of choreographic principles of dance composition and stage presentation. The development of an appreciation of various types of dance such as: primitive, medieval, expressionism, cerebralism, jazz, improvisation, impressionism, formal ballet, modern ballet, Broadway musical, Americana and folk dances. The dancer will develop an appreciation of the relationship existing between dance and other forms of art. A dance production will be staged in the spring semester as a class presentation.

*2 ELEMENTARY FOLK DANCE (½)

Folk and square dance fundamentals, basic steps (two-step, polka, schottische, waltz and mazurka) and the development of a correct rhythmical response. Representative dances of many countries are presented.

*2 INTERMEDIATE/ADVANCED FOLK DANCE (½)

Prerequisite: Elementary Folk Dance or instructor's permission.

Continuation of techniques introduced in the beginning class with emphasis on more advanced dances and dance styles. Exhibition work may be included.

*2 ELEMENTARY SOCIAL DANCE (½)

Social dance fundamentals, basic social dance steps (waltz, tango, fox trot, rumba and cha cha cha), etiquette and the development of a correct rhythmical response.

*2 INTERMEDIATE SOCIAL DANCE (½)

Prerequisite: Elementary Social Dance.

An extension of Elementary Social Dance course. More intricate variations are studied in the waltz, fox trot, rhumba, cha cha cha and mambo. In addition, there is more concentration on individual style, transitions and the character of the individual step. Time permitting, other dances will be offered.

***2 ELEMENTARY SWIMMING (½)**

Instruction in the elementary skills, such as water adjustment, floating, elementary crawl, elementary back stroke, breathing techniques and elementary diving; also personal water safety procedures.

***2 LIFE SAVING (½)**

Prerequisites: The ability to swim 440 yards continuously, demonstrating the crawl, side stroke and breast stroke; standing front dive; surface dive to six-foot depth and swim two body lengths under water; floating.

Progressive skill development in take-offs, approaches, carries, defensive mechanism, shallow water carries, water safety knowledge and artificial respiration.

***2 WATER SAFETY INSTRUCTION (½)**

Prerequisite: Current American Red Cross Senior Life Saving Certificate.

Phase I: Development of effective performance in the nine basic swimming strokes and the various life saving and water safety skills. Phase II: Teaching techniques, methods and knowledges necessary to teach American Red Cross swimming and life saving courses.

***2 AQUATIC FITNESS (½)**

Prerequisite: Ability to swim 100 yards continuously, demonstrating the crawl and breast stroke.

Endurance swimming stressed, based on an interval training system. A class goal will be to be able to swim one mile within a 30-minute time period.

***2 ELEMENTARY DIVING (½)**

Prerequisite: The ability to demonstrate competency in and adjustment to deep water.

Open to beginning men or women divers. Each student will be challenged by dives suited to his or her level of ability. Dives will be taught from both the one- and three-meter boards at the discretion of the instructor.

***2 ELEMENTARY SKIN AND SCUBA DIVING (½)**

Prerequisite: The same as Life Saving; only beginning students in skin and scuba training will be admitted.

All elements of skin diving are covered as well as complete swimming pool training with scuba gear. Students who successfully complete this course may proceed to take their

"ocean dives" from licensed scuba operators. All scuba equipment is provided by the College.

***2 ADVANCED TENNIS (½)**

Prerequisite: Permission of the instructor.

A course in advanced aspects of tennis play. Instruction is given in advanced techniques beyond the elementary level. Ladder play is conducted in singles and doubles. A testing program is conducted in all skills and techniques.

***2 ELEMENTARY ARCHERY (½)**

For beginning archers. Deals primarily with the fundamentals of target archery. Individual and team competition is used in the Junior Columbia Round, Columbia Round and clout shooting. Also included is the basic understanding of rules, scoring, terminology, and care and selection of equipment.

***2 INTERMEDIATE ARCHERY (½)**

Prerequisite: Women—Successful completion of Elementary Archery at C.S.M. or instructor's permission with previous archery experience in high school.

Continuation of target archery techniques (with increasing distances), plus variety of archery games and competition (clout shooting, roving archery, modified hunters and field rounds, Flint Round, Columbia Round). Team and individual competition.

§2 ADULT CONDITIONING ACTIVITIES (ADULT CO-ED) (½)

Three lab hours per week.

A course designed and structured for the adult male or female who is desirous of engaging in a program of exercise designed to promote cardiovascular and respiratory fitness. Course content includes instruction and participation in recreational activities as follows: badminton, volleyball and trampoline.

§90 INTRODUCTION TO RECREATION TECHNOLOGY (3)

Three lecture hours per week.

Prerequisite: A general interest in recreation and recreation work.

History of recreation; philosophy of recreation, public relations; personality traits and habits; the responsibilities of the recreation leader; the nature and psychology of leadership, the approaches to leadership; athletic activities; games; performing arts; recreation arts and crafts; social recreation; community service; arts and crafts; social recreation; community service; program planning; research and evaluation in recreation.

*Day only.

§Evening only.

Physical Education (Women)

The Department of Physical Education for Women of the College of San Mateo operates under the State Law of California which requires each regularly registered student to participate in a Physical Education activity. State requirements in Physical Education are as follows: In accordance with the provisions of the California School Code, all women students, except those physically disabled as certified by a practicing physician or otherwise excused, are required to attend organized courses in Physical Education for two hours each week that school is in session.

Department Requirements: Students having medical excuses from private physicians must present them at time of registration.

A student may elect more than one physical education course a semester and receive credit for it. A student must be enrolled in and pass a one-half unit physical education course each semester until graduation.

Regulation uniforms have been adopted to be worn by participants in the following physical education activities:

Bowling, Archery, Folk and Square Dance, Social Dance and Golf; sport clothes and low-heeled, rubber-soled shoes. (Approximate cost per semester for Bowling, \$11; for Beginning Golf, \$5.)

Fencing: white capris or long pants, white blouse, white socks, white tennis shoes.

Elementary Judo: sweat pants, white blouse, white socks and tennis shoes.

Modern Dance, Rhythmic Gymnastics: leotard and tights. (Shoes and skirt are optional.)

All other activities: regulation blue shorts and white shirt, white socks and white gym shoes. (Sweat shirts—blue, white or gray—are optional.)

Activities offered are listed below. Unless otherwise specified, there are no prerequisites. All classes meet two hours per week. Combination courses in the schedule (volleyball-basketball, etc.) will include approximately nine weeks of each of the two activities.

*1 AQUACADE PRODUCTION (½)

Prerequisite: Previous water show experience or synchronized swimming experience.

Designed for students interested in working on production of a spring water show. Will include water choreography, costuming, sets, lighting, make-up, sound, narration and improvement of individual synchronized swimming skills.

*Day only.

*1 ELEMENTARY ARCHERY (½)

Fundamentals or target shooting, care of equipment, safety rules, individual practice and team competition and tournaments.

*1 ELEMENTARY BADMINTON (½)

Basic skills, strategy, theory and practice in badminton. Skills include serving, basic strokes, placement and practice in singles and doubles play. A doubles tournament is conducted in this course.

*1 INTERMEDIATE-ADVANCED BADMINTON (½)

Prerequisite: Elementary Badminton class or permission from the instructor.

Designed to improve the intermediate and advanced player's skill, knowledge and enjoyment of the game. Emphasis on strategy, tactics, footwork, doubles teamwork and the singles game.

*1 ELEMENTARY BASKETBALL (½)

Basic skills, strategy, theory and practice in basketball. Skills include dribbling, shooting, guarding and passing. Also included are the theory, use and practice of team play and strategy.

*1 INTERMEDIATE BASKETBALL (½)

Prerequisite: Elementary basketball at CSM or one year high school basketball.

Includes basic skills of elementary basketball with emphasis on zone defense, game play and strategy.

*1 ADVANCED BASKETBALL (1)

Prerequisites: Previous college basketball class or high school GAA; permission of instructor.

Advanced skills, techniques and strategies of women's basketball. Designed to challenge the advanced player as well as to provide her opportunity for inter-school games.

*1 BODY MECHANICS (½)

Stress is placed on physical fitness. The course offers measurement in strength, endurance, flexibility and coordination. The course strives to offer the student a means of improving weaknesses in the previously mentioned areas, through specific activities designed to build improvement.

*1 ELEMENTARY BOWLING (½)

Fundamental skills will include approach, release and follow-through for a straight ball and a hook. The history, rules and scoring of bowling will also be included.

*1 ADVANCED BOWLING (½)

Prerequisite: Must have at least a 110 average.

Course consists of coached league bowling.

Approximate cost, \$11-\$13 per semester.

***1 ELEMENTARY FENCING (½)**

Instruction and practice in elementary skills including form, attacks, parries, counter-attacks, timing and strategy. Also included are the history of the sport, safety, etiquette, rules, terminology, judging, directing and score keeping.

***1 FIELD HOCKEY (½)**

Prerequisite: Some knowledge of field hockey recommended but not required.

Review of elementary stick work and basic skills. Several methods of field coverage will be introduced, followed by coached play.

***1 FIELD SPORTS (½)**

Class may elect to cover one or more of the following sports: soccer, field hockey, speedball, speed-a-way and flagball. Instruction in basic skills, strategy and rules of the selected sport(s).

***1 FITNESS ACTIVITIES (½)**

Exercises ranging from mild to very active, individual fitness evaluation and all-around endurance. Designed to help the individual understand the need for and the benefits of physical fitness.

***1 ELEMENTARY GOLF (½)**

Instruction in fundamentals including grip, stance, swing, use of the various clubs, rules, scoring and the etiquette of the game. The class meets on campus. Outside assignments include practice sessions at a driving range and playing nine holes of golf.

Approximate cost per student is \$6-\$7 per semester.

***1 INTERMEDIATE GOLF (½)**

Prerequisite: Permission of instructor.

Emphasis on continued development of the basic golf fundamentals. Half of the semester is spent at the driving range and half on a golf course.

Approximate cost per semester is \$11.

***1 ELEMENTARY JUDO (½)**

Consideration is given to the rules, procedures, techniques of falling, unbalancing, throwing techniques, combination techniques as related to physical development. The emphasis of this course is on Judo as a sport. Self-defense will not be a primary concern.

***1 ELEMENTARY TRAMPOLINE (½)**

Trampoline activity on the elementary level—the fundamen-

*Day only.

tal bounces, safety provisions, drops, combinations, turns, twists, and some intermediate activity for those who qualify. A detailed testing program is given in all trampoline skills.

***1 RHYTHMIC GYMNASTICS (½)**

Dance movements using small hand apparatus as the focus point. Apparatus includes Swedish balls, jump ropes and Indian clubs. Individual, duo and group routines are composed and presented. In some classes, elementary tumbling and beginning free exercise are included.

***1 MOVEMENT IMPROVISATION AND CREATIVITY (½)**

Dance and exercise movements executed for physical conditioning and movement analysis. Creative compositions composed individually and in groups.

***1 ELEMENTARY SOFTBALL (½)**

Activity in the basic skills, strategy and practice in softball. Skills include batting, catching and throwing. Also included are the rules of play and team strategy through round-robin competition.

***1 ADVANCED SOFTBALL (½)**

Prerequisite: One semester of college softball or instructor's permission.

Emphasis on advanced skills, techniques and strategies of women's softball. Designed to challenge the advanced player as well as to provide her opportunity for interschool competition.

***1 INTERMEDIATE SWIMMING (½)**

Prerequisite: Ability to swim in deep water comfortably.

Skills will involve the breast stroke, crawl, side stroke, elementary back stroke, treading, floating and elementary diving.

***1 SYNCHRONIZED SWIMMING (½)**

Prerequisites: Must be able to adequately perform the crawl, side stroke, back crawl, breast stroke, treading water and floating.

Course includes beginning, intermediate and advanced synchronized swimming figures, variations of standard swimming strokes, synchronization of skills to music, choreography and performing of group and solo routines.

***1 TEAM SPORTS (½)**

Basic skills, advanced techniques, rules and team play for a variety of team sports, including a field sport (hockey, speed-a-way or speedball, flagball) and basketball, volleyball or softball.

***1 ELEMENTARY TENNIS (½)**

Fundamentals, strokes, strategy and rules as related to ability level. The testing program includes written examination

on rules and strategies, and skill tests on all techniques taught.

***1 INTERMEDIATE-ADVANCED TENNIS (½)**

Prerequisite: Demonstration of ability in forehand, backhand and service.

The emphasis will be on net play and doubles and singles strategy.

***1 ELEMENTARY VOLLEYBALL (½)**

The volley, set, dig and hit will be the basic skills included. Rotation, rules and team play will be stressed. A tournament will conclude the semester activity.

***1 ADVANCED VOLLEYBALL (1)**

Prerequisite: One semester of college volleyball or instructor's permission.

Designed for students wishing more advanced play and skills of volleyball. Includes a quick review of the dig or bump, volley with footwork, overhand serve. The spike, block and tumble dig will be introduced. All of these skills will be incorporated into offensive and defensive court play.

***1 ELEMENTARY GYMNASTICS (½)**

Apparatus work at the elementary level. Apparatus will include balance beam, uneven parallel bars and women's vaulting horse. Coordination, balance and flexibility will be stressed. Opportunity is given the student to develop her creative ability in working out possible combinations and routines.

***1 INTERMEDIATE/ADVANCED GYMNASTICS (½)**

Prerequisite: One semester of Beginning Gymnastics in high school or college, or permission of instructor.

Techniques of intermediate and advanced skills of the uneven parallel bars, balance beam, vaulting horse, tumbling and free exercise. The gymnasts will participate in inter-school meets held during the semester.

***1 TRACK AND FIELD (½)**

Designed to familiarize the students with the various track and field events open to women, to provide a training program for those events and to offer an opportunity to participate in the events.

***1 TUMBLING (½)**

Balances and rolls, followed by various turns, springs and combinations. These movements are performed forward, backward and sideward in trips progressing down the mat. Four required beginning trips are performed for the final class meet.

*Day only.

***20a-b-c-d PHYSICAL EDUCATION COMPETENCIES (2-2-2-2)**

Six hours per week.

A series of planned activities designed to assist students majoring or minoring in Physical Education or Recreation to attain the skill level necessary to pass the upper division skill competency requirements of the four-year colleges and universities. Activities include aquatics, dance, gymnastics, individual sports and team sports.

One of this class series is offered each semester for four semesters.

***42a-42b WOMEN'S SPORTS OFFICIATING (1-1)**

Two lecture hours and two activity hours per week.

Fall: basketball and volleyball.

Spring: basketball, softball and other sports.

Training in officiating procedure in women's sports. Participation in officiating within the immediate class, regular C.S.M. service classes, advanced classes and at high schools. Designed for women Physical Education or Recreation majors or minors.

Physical Science

10 INTRODUCTION TO THE PHYSICAL SCIENCES (3)

Three lecture-discussion hours per week.

Prerequisite: Open to all students except those who are currently enrolled in or have completed a college course in physics, astronomy or chemistry.

Survey of topics in physics, astronomy and chemistry. Intended for non-science majors.

***38 NATURAL SCIENCES (3) Fall**

Three lecture-discussion hours per week.

Prerequisites: Biology 1, or Biology 2, or any Physical Science 10 level course except Geology 10.

An inter-disciplinary course drawing from the areas of life and physical sciences. Lectures, seminars and discussions will deal with current problems in science and their impact on contemporary society.

This course may be taken as either Biology 38 or Physical Sciences 38 for required credit in Natural Sciences.

Physics

2a-2b GENERAL PHYSICS (4-4)

Three lecture hours and one three-hour lab period per week.

Prerequisites: Elementary Algebra and Plane Geometry. (Physics 2a is prerequisite to Physics 2b.)

Lectures, with experimental demonstrations and laboratory, covering mechanics, heat and sound in the first semester, and magnetism, electricity, light and modern developments in the second semester. (Designed for students majoring in some field of letters and science; required for those planning to enter medicine, dentistry, pharmacy, optometry, agriculture or forestry.)

4a-4b-4c GENERAL PHYSICS (4-4-4)

Three lecture hours, one recitation hour and one two-hour lab period per week.

Evening sections offered only in sequences of 4a-4b-4c.

Prerequisites: 4a—Math. 31 and concurrent enrollment in Math. 32; 4b—Physics 4a, Math. 31 and 32, and concurrent enrollment in Math. 33; 4c—Physics 4a and 4b.

4a—Mechanics, wave motion and special relativity.

4b—Electricity and magnetism.

4c—Heat, light and modern physics.

4a-4b-4c constitute a three-semester program designed to give the student majoring in Engineering, Physics or Chemistry a thorough foundation in the fundamentals of physics.

10 DESCRIPTIVE INTRODUCTION TO PHYSICS (3)

Three lecture hours per week.

Prerequisite: None; the equivalent of at least one semester of high school level Algebra is recommended. Open to all students except those who have had, or are taking Physics 2a or 4a.

A description with experimental demonstrations of the more important phenomena of physics.

Police Science

9 INTRODUCTION TO LAW ENFORCEMENT (3)

Three lecture hours per week.

An orientation of the Police Science program as well as law enforcement as a profession and means of livelihood. This includes history and philosophy of law enforcement. The employment opportunities and general requirements of the various law enforcement agencies. Problems facing law enforcement and the general crime trends and crime rate for various sections of the country are stressed.

10 ADMINISTRATION OF JUSTICE (3)

Three lecture hours per week.

*Day only.

Prerequisite: Concurrent registration in, or successful completion of, Police Science 9.

Review of criminal justice systems in the United States with special emphasis on California. Procedures from time of offense until disposition of the case by the court or Adult Authority. Basic principles of federal, state and local laws as they pertain to law enforcement and the court system.

***50 PATROL PROCEDURES (3)**

Three lecture hours per week.

Prerequisite: Police Science 9 or concurrent registration in same.

Methods, techniques and responsibilities of the patrol unit. The value of one-man car as opposed to the two-man car; marked vs. unmarked patrol cars. Beat patrol and observation, police hazards and how to handle them.

51a-51b CRIMINAL INVESTIGATION (3-3)

Three lecture hours per week.

Prerequisites: Sophomore standing; Police Science 9, 52 or 55, or consent of instructor.

Rudiments of criminal investigation; crime scene search; collection, preservation and identification of physical evidence; scientific aids; sources of information; interrogation of victims, witnesses and suspects; cooperation with related agencies; case preparation and follow-up work.

52 CRIMINAL LAW (3)

Three lecture hours per week.

Prerequisite: Police Science 9.

Reason for criminal laws, their source and function in our society. The structure, definitions and most frequently used sections of the California Penal Code. Classification of crimes, nature of crimes, intent involved in the commission of an offense, attempts, conspiracy and criminal responsibility.

55 CRIMINAL EVIDENCE (3)

Three lecture hours per week.

Prerequisites: Police Science 52, or concurrent registration in Police Science 52.

Definition of evidence from the California point of view; a brief overview of the federal point of view concerning evidence. Admissibility of evidence in criminal court cases; materiality and competency of evidence. Distinction between admissions and confessions; the exceptions to the hearsay rule; types of evidence.

56 RECORDS AND REPORT WRITING (2)

Two lecture hours per week.

Prerequisites: Sophomore standing; Police Science 52.

History of records and reports pertaining to police. Various types of files and their uses; the value of the file system as used in the Police Department of the state; the method of writing police reports, what material is important, what purpose the different reports will fill.

***59 JUVENILE PROCEDURES (3)**

Three lecture hours per week.

Prerequisite: Police Science 9 or concurrent registration in same.

The position the law enforcement agencies play in juvenile and delinquency control; organization and functions of related juvenile agencies; the laws governing the handling of juvenile offenders and their application; a brief resume of the juvenile court and its jurisdiction.

60 TRAFFIC CONTROL (3)

Three lecture hours per week.

Prerequisite: Police Science 9 or concurrent registration in same.

Laws relating to the registration of a vehicle drivers license laws; Vehicle Code sections most often encountered and violated; regulation and traffic control; traffic accident investigation; traffic accident report forms, types and uses.

§63 CRIMINAL IDENTIFICATION (3)

Three lecture hours and one lab hour per week.

Prerequisite: Police Science 9.

Theory of and practice in fingerprint classification, describing persons, portrait parle, development of latent fingerprints, photography of fingerprints, and modus operandi in its application to individual significances. Photographic techniques; camera and darkroom procedures.

70 POLICE AND COMMUNITY RELATIONS (2)

Two lecture hours per week.

Prerequisites: Sophomore standing; Police Science major.

The role of the Police Department in the community government and the value of good public relations. The important role the racial problems plays in the Police Department's activities will be stressed.

71 POLICE ORGANIZATION AND ADMINISTRATION (2)

Two lecture hours per week.

Prerequisites: Sophomore standing; Police Science major.

The various functions of the police organization. The chain of command, span of control, functional supervision, unity of command and the purpose of the police organization.

*Day only.

§Evening only.

***80a-80b INTERNSHIP (2)**

Five hours per week—one hour in the classroom and four hour to be arranged.

Prerequisites: Sophomore standing, Police Science major and consent of instructor.

Student will do assigned tasks in a local police station or other agency of the Criminal Justice System as arranged.

This course may be repeated for credit.

§90 PRINCIPLES OF LAW ENFORCEMENT (12)

This course, which is restricted to police officers already employed in law enforcement jobs, includes the elements of investigations; report writing and descriptions; collection, identification and examination of evidence; elements of interrogation; police procedures; traffic accident investigation; jail procedure and custodial care; elements of fingerprinting.

§92 SUPERVISORY TRAINING (4)

100 hours.

For police personnel at the first level of supervision (Sergeant). No one other than regularly employed police personnel may attend.

Material covered is primarily concerned with the role of the sergeant as a leader, instructor, decision maker, and assistant in the decision at the policy-making level.

Political Science

***1 INTRODUCTION TO POLITICAL SCIENCE (3)**

Three lecture-recitation hours per week.

Examination of the nature of the state, basic forms of government and the theories of democracy, communism, fascism and other political ideologies. Analysis of the roles of political parties and pressure groups as well as the nature of public opinion and voting behavior. Consideration of the character of modern public administration and a brief survey of the pattern of contemporary international relations.

***2 CONTEMPORARY FOREIGN GOVERNMENTS (3)**

Three lecture-recitation hours per week.

Prerequisite: one of the following: Pol. Sci. 1, 5, 21, or 25, or consent of instructor.

An introduction to the problems of comparative analysis of western and non-western political systems. The course emphasizes the interrelationships of social configuration, ideology, and governmental institutions. Case studies are utilized to assess methodological problems of comparative analysis: legitimacy and consensus, political dynamics, political institutions, political change and modernization.

3 INTERNATIONAL RELATIONS (3)

Three lecture-discussion hours per week.

The nature of relations among states, with analysis of the basic forces affecting the formulation of foreign policy and the dynamics of international politics. The evolution and operation of the United Nations Organization are a major topic of study.

***5 INTRODUCTION TO POLITICAL THEORY (3)**

Three lecture hours per week.

Prerequisite: Successful completion of at least 12 semester units of college work.

A study of classical and modern political thought designed to develop student understanding of various theoretical approaches to politics, basic political problems and proposed solutions to these problems.

***7 SURVEY OF PROBLEMS IN CIVIL LIBERTIES AND CIVIL RIGHTS (3)**

Three lecture hours per week.

Prerequisite: Pol. Sci. 21 or the equivalent is strongly recommended.

A survey and analysis of the issues and problems considered by the U.S. Supreme Court in the area of civil liberties and civil rights. The rights of racial, political and religious minorities, and of criminal defendants; the concepts of due process and equal protection of the laws; the interaction of the Supreme Court with the President, Congress, political parties and interest groups.

Satisfies the American Institutions requirement.

***9 CONTEMPORARY ETHNIC POLITICS (3)**

Three lecture hours per week.

Prerequisite: None. Pol. Sci. 1 or 23 recommended.

Analysis of general and specific political goals and methods of contemporary Afro-American, American Indian, Hispanic and Asian-American groups in the United States national, state and local politics. Specific emphasis will be focused upon political activities of formal and ad hoc minority group organizations in California and the Southwest during the 1950s and 1960s. The course will involve detailed exploration of the concepts of political and economic self-determination, ethnic bloc-voting, Black Power, Third World alliances, civil disobedience and other alternatives to violence.

Satisfies the American Institutions requirement.

12 STATE AND LOCAL GOVERNMENT (3)

Three lecture-discussion hours per week.

May be substituted for Pol. Sci. 23.

*Day only.

§Evening only.

Among topics covered are: structure and operation of the governments of California at state and local levels; problems which transcend local boundaries and agencies which cope with them; processes of decision-making including roles played by political parties and interest groups; inter-relationships of local and state agencies, including tax allocations and limitations; and problems of adapting government to better meet urban needs.

Satisfies the California Institutions requirement.

21 AMERICAN INSTITUTIONS (3)

Three lecture-discussion hours per week.

Thorough study of the Constitution, a survey of the organization and functions of the branches of the Federal government and an examination of the dynamics of the American political process.

Satisfies the American Institutions requirement.

***22 AMERICAN NATIONAL GOVERNMENT (3)**

Three lecture-discussion hours per week.

A comparative critical analysis of American political institutions from Franklin Roosevelt's administration to the present. Policy-making and political activity—both inside and outside the traditional system of checks and balances—is scrutinized.

Satisfies the California state and local government requirement.

23 CALIFORNIA STATE AND LOCAL GOVERNMENT (2)

Two lecture-discussion hours per week.

Designed to acquaint the student with the institutions and problems of state and local government in California.

Satisfies the California state and local government requirement.

§24 CALIFORNIA URBAN GOVERNMENT (2)

Two lecture hours per week.

Prerequisite: None, but Pol. Sci. 21 is recommended.

A survey of the principal problems of urbanization and the growth of metropolitan communities with emphasis on the major issues of decision-making and administrative organization in California institutions requirements.

***25 NATIONAL, STATE AND LOCAL GOVERNMENT (5)**

Five lecture-discussion hours per week.

An introduction to the principles and problems of American government at the national, state and local levels. Intergovernmental relationships are examined from a functional point of view. Major areas of emphasis are American federalism,

judicial review, the political process in nation and state, civil liberties, foreign policy and the role of the citizen at all levels of government.

Satisfies both the American Institutions and the California Institutions requirements.

Not open to students who have had Pol. Sci. 21 or 23 or comparable courses in American or state institutions.

Established primarily for students whose majors are Political Science, Pre-Law, Criminology and allied behavioral and social sciences.

***27 AMERICAN SOCIETY (5)**

Five lecture-discussion hours per week.

Prerequisite: Strictly limited to foreign students or recent immigrants.

An orientation course in American society and culture. It encompasses social, political and economic institutions as well as history. There will be particular attention given to aspects of American life and historical development that are unique—ethnic history, patterns of voluntary association, political and non-political, educational trends, in addition to some of our cultural characteristics.

Meets the American Institutions and California Institutions requirements.

***39 INTERNATIONAL ORGANIZATION: UNITED STATES (3)**

Prerequisite: Consent of the instructor.

An analytical study of the institutional structure of the United Nations as well as the operative political forces within the organization. Includes extensive research into actual issues before the United Nations. At the conclusion of the course, a simulation exercise is conducted through participation in the Model United Nations of the Far West. Delegates are selected during the Fall semester.

***49 SPECIAL PROJECTS (1-2)**

Prerequisites: Previous work in Political Science, and the consent of the instructor and the Social Science Division Chairman.

Specified individual study or directed research in specific problem areas.

§51a-51b POLITICAL ORIENTATIONS IN THE MODERN WORLD (3-3)

Three lecture hours per week.

Analysis and discussion of the assumptions and attitudes underlying political behavior and their effects upon the world society. 51a covers domestic issues; 51b, foreign issues.

*Day only.

§Evening only.

Psychology

1a GENERAL PSYCHOLOGY (3)

Three hours of lecture per week.

An introduction to psychology, including such topics as motivation of behavior, emotion, learning and thinking, the basis of observation and the methods of measuring individual differences. Emphasis is placed upon experimental evidence.

***1b EXPERIMENTAL PSYCHOLOGY (3)**

Three lecture hours per week.

Prerequisite: Psych. 1a, with minimum grade of C. Psych. 7 is recommended.

Emphasizes the philosophy and aims of scientific inquiry and how it can be applied to answer questions in psychology. Students will carry out experiments to familiarize themselves with the methods discussed.

Recommended for Psychology majors.

4 COURTSHIP, MARRIAGE AND THE FAMILY (3)

Three hours of lecture per week.

The history and development of marriage; dating; courtship; personality adjustment in marriage; parenthood; the problem of divorce; mate-selection; love; the family; anatomic, physiologic, psychological and sociologic aspects of sex; children; religious factors; marriage as a social institution.

Identical to Sociology 4.

5 CHILD DEVELOPMENT (3)

Three class hours per week.

Prerequisite: Psych. 1a.

Consideration of perceptual, cognitive, social and emotional development extending from birth through adolescence with an emphasis on current research.

***6 SOCIAL PSYCHOLOGY (3)**

Three hours of lecture per week.

Prerequisite: Psych. 1a or Sociology 1.

The study of human interaction, with emphasis on social patterning and processes of perception, identity, roles and attitudes.

Identical to Sociology 6.

***7 BASIC STATISTICAL CONCEPTS (3)**

Three class hours per week.

Prerequisites: Math. 20 or four semesters of high school level Algebra with a C average. Psych. 1a, or Sociology 1, or Anthro. 2. (Psych. 1a is recommended.)

An introduction to statistical concepts and techniques. This course will cover the basic descriptive techniques and statistical inferences used in the Behavioral Sciences.

Recommended for Psychology majors.

10 PSYCHOLOGY IN PRACTICE (3)

Three hours of lecture per week.

Intended for those who wish a general picture of human psychology but who do not want to take further courses in Psychology. Emphasis will be on the application of psychological principles to problems of everyday living rather than the technical-scientific approach of Psych. 1a.

14 GROUP DYNAMICS (2)

Three hours of group participation per week.

An opportunity for a small group of people to experience a group interaction within a relatively unstructured situation with a climate of maximum freedom for personal expression, exploration of feelings and interpersonal communication. The emphasis will be upon experience rather than theoretical and academic explanation of the group process.

33 PSYCHOLOGY OF ADJUSTMENT (3)

Three hours of lecture per week.

Prerequisite: Psych. 1a.

The study of the ways people adjust to their environments. Emphasis will be upon the ways personality develops and changes. Case illustrations and different theories of personality will be presented.

***40 CHILD OBSERVATION PRACTICUM (3)**

Three lecture hours and two laboratory hours per week.

Prerequisite: Psych. 1a and 5.

Seminar in child observation with field work. Each student is assigned to an emotionally disturbed child in conjunction with the San Mateo County Child Guidance Clinic. Student will be required to write an in-depth evaluation of each of his meetings and stressing his observations of the child, his observations about the interaction between himself and the child, and any changes in behavior noted. The student will be required to communicate regularly with the child's therapist and visit the San Mateo Child Guidance Clinic at least once during the semester.

***48 SPECIAL TOPICS (3)**

Three lecture hours per week.

Prerequisite: Honor student standing or consent of instructor.

A seminar on topics of contemporary interest in psychology, designed to provide a means for discussing changing knowledge and important issues in psychology. Specific subject matter will vary and will be announced in advance.

*Day only.

§Evening only.

***49 SPECIAL PROBLEMS (1-2)**

Admission by consent of instructor and the Social Science Division Chairman.

Special projects such as working with children at the San Mateo County Child Guidance Clinic.

§51 CHILD PSYCHOLOGY (3)

Three class hours per week.

An introductory course dealing with the psychological phases of children's development for parents, teachers and others working with children.

§60a-60b INTRODUCTION TO EARLY CHILDHOOD (3-3)

Two lecture hours and three laboratory hours per week.

Prerequisites: 60a—None; 60b—Psych. 60a.

60a—Techniques of observing and recording growth, development, learning and behavior of preschool children. The effects of differences in child rearing practices on the development of personality with consideration of the disadvantaged.

60b—Exploration of the nursery school curriculum, programs, teaching techniques, materials and equipment. Basic methods of relating to children, meeting their needs, working with their problems and providing for optimum growth and learning conditions in the nursery school.

§61a-61b NURSERY SCHOOL PRINCIPLES AND PRACTICES (3-3)

Two lecture hours and three laboratory hours per week by arrangement.

Prerequisites: 61a—Psych. 60a-b; 61b—Psych. 61a.

61a—Active participation in all aspects of the nursery school program under the close supervision of an experienced teacher. Planning, presenting and supervising nursery school activities, including long-range curriculum planning and programming. Interpretation and evaluation of experience as a student teacher aide in seminar as well as individual conference sessions.

61b—Principles and practices of creativity; the value of creative activities and experiences; creative expression in the nursery school through art, music, language, dance and science.

§62 CHILD, FAMILY AND COMMUNITY (3)

Three class hours per week.

Designed for those who are working with or who are concerned with the education and welfare of preschool children. Patterns of family living in a democratic society and the role and interaction of members; varying factors affecting family life—racial, cultural, economic, social, urban and suburban;

home-nursery relationships; community resources—health, welfare, education, counseling, guidance, recreation and religion.

Quality Control

§60 INSPECTION PRINCIPLES AND TECHNIQUES (3)

Three lecture hours per week.

Designed to provide experience with the various types of inspection equipment, their correct application, use and care; to establish the basic metrology principles of accuracy, repeatability, reference points, standards to quality control.

§61 INTRODUCTION TO QUALITY CONTROL (3)

Three lecture hours per week.

Prerequisite: Math. 11 or equivalent.

Construction and interpretation of variables charts, frequency distributions, process and specification comparisons, attribute charts, process simulation, acceptance sampling, and Mil-Standards.

§63 STATISTICAL CONCEPTS AND TECHNIQUES (3)

Three lecture hours per week.

Prerequisite: Quality Control 61.

Modern statistical quality control. Statistical measures, histogram analysis, construction and analysis of variable and attribute control charts; use of Dodge-Romig and military standards acceptance sampling plans; statistical aspects of tolerances. Emphasizes practical applications of techniques.

Real Estate

(See "Business.")

Social Science

*33 AFRO-AMERICAN CULTURE (3)

Three lecture hours per week.

A contemporary view of Black America. Current political and social movements in Black communities with an emphasis on the urban area. The contemporary Black family and the culture of the contemporary Black community in present and historical perspective.

*48 MAN AND SURVIVAL (3)

Three hours per week of lecture and discussion.

§Evening only.

*Day only.

An experimental course utilizing team teaching techniques to explore a series of current and urgent human concerns. The theme or themes of each semester's exploration will be developed by an inter-disciplinary team, drawn primarily from the Social Sciences, and will be publicized in time for registration for the semester in which the course is to be offered. See counselors for current offering.

May be repeated for credit.

Sociology

1 INTRODUCTION TO SOCIOLOGY (3)

Three class hours per week.

Analysis of processes of group behavior and interaction between the individual and society; personality development in different cultures as shaped by learned customs, attitudes and values. Study of family, politico-economic and religious behavior; social movements; "mass society" and communications; community structure; social class and status, ethnic minorities, with close study of Negro-white relationships.

2 SOCIAL PROBLEMS (3)

Three class hours per week.

Prerequisite: Sociology 1 strongly recommended.

Theories of social problems involving functionalism and interactionism as opposed to individualistic approaches. Theoretical and descriptive studies of specific problem areas of crime and delinquency, mental illness, drug use and suicide and the social problem areas of mass society, urbanism, poverty, minority groups, population and war. Collective behavior and scientific problem-solving approaches.

*3 MINORITIES IN AMERICAN SOCIETY (3)

Three hours of lecture per week.

Prerequisite: Sociology 1 or 2, or History 33.

Sociology of inter-ethnic contact with emphasis on the experience of minorities in the United States. An examination of the dual themes of racism and equality in American society.

*4 COURTSHIP, MARRIAGE AND THE FAMILY (3)

Three hours of lecture per week.

The history and development of marriage; dating; courtship; personality adjustment in marriage; parenthood; the problem of divorce; mate-selection; love; the family; anatomic, physiologic, psychologic and sociologic aspects of sex; children; religious factors; marriage as a social institution.

Identical to Psych. 4.

***6 SOCIAL PSYCHOLOGY (3)**

Three hours of lecture per week.

Prerequisite: Psych. 1a or Sociology 1.

The study of human interaction, with emphasis on social patterning and processes of perception, identity, roles and attitudes.

***12 URBAN SOCIOLOGY (3)**

Three hours of lecture per week.

Prerequisite: Three units of Sociology or Psychology 6.

Analysis of patterns and processes of the developing urban regions: community typology, ecology, patterns of growth, urbanism as a way of life, social class and-racial trends, planning, conservation and experimental solutions.

Acceptable in fulfilling the California Institutions requirement.

***49 SPECIAL TOPICS (1-2)**

Prerequisite: Three units of Sociology and permission of the instructor.

Students will do field and/or library research culminating in a paper, or complete a course of directed reading and a written report.

Spanish

Language Laboratory and Listening Requirement—Students enrolled in certain courses in foreign language are required to make use of the language laboratory as prescribed by each department. Imitation, response and independent practice are an integral feature of the study of a foreign language at the College.

***1 ELEMENTARY SPANISH (5)**

Five class hours and 1½ lab hours per week.

Prerequisite: Average grade of C or better in English.

Spanish structures and active vocabulary based on oral and written pattern drills. Conversation based on short readings containing only structures already practiced.

***1a INTRODUCTION TO SPANISH (3)**

Five class hours and 1½ lab hours per week.

Prerequisite: None. The course is designed for students who prefer a slower introduction to Spanish.

Note: A student who has completed one year or more of any foreign language with a grade of B or better is not eligible to enroll in this course.

Pronunciation, oral and written practice of Spanish patterns. Learning of basic essentials.

*Day only.

***1b ADVANCED INTRODUCTION TO SPANISH (3)**

Five class hours and 1½ lab hours per week.

Prerequisite: Spanish 1a with a grade of C or better.

Continuation of Spanish 1a. Further study of Spanish patterns. Additional work on basic essentials.

Students who complete Spanish 1b with a grade of C or better will be eligible to take Spanish 2.

***2 ADVANCED ELEMENTARY SPANISH (5)**

Five class hours and 1½ lab hours per week.

Prerequisite: Spanish 1 with a passing grade; or completion of Spanish 1a-1b with a passing grade; or assignment by the Foreign Language Division on the basis of the Foreign Language Placement Test in Spanish.

Continuation of Spanish 1. Reading of Spanish short stories to serve as a basis for classroom conversation.

***3 INTERMEDIATE SPANISH (4)**

Four class hours and one lab hour per week.

Prerequisite: Spanish 2 with a passing grade or assignment by the Foreign Language Division on the basis of the Foreign Language Placement Test in Spanish.

Practice of conversation and composition; review of grammar; class and collateral reading of Spanish and Spanish-American literature.

***4 ADVANCED INTERMEDIATE SPANISH (3)**

Three class hours and one lab hour per week.

Prerequisite: Spanish 3 with a passing grade or assignment by the Foreign Language Division on the basis of the Foreign Language Placement Test in Spanish.

Further practice of conversation and composition based on class reading of works of modern Spanish and Latin-American authors; review of grammar; collateral reading of Spanish and Spanish-American literature.

***3n SPANISH FOR STUDENTS WITH SPANISH-SPEAKING BACKGROUND (3)**

Three class hours per week.

Prerequisite: Ability to converse in Spanish.

Reading of contemporary Latin-American plays; study of vocabulary, spelling and grammar; geared to the special needs of the students enrolled in the class.

***4n SPANISH FOR STUDENTS WITH SPANISH-SPEAKING BACKGROUND (3)**

Three class hours per week.

Prerequisite: Ability to converse in Spanish.

A continuation of 3n. Reading of contemporary Latin-American plays and novels; further study of vocabulary and usage, having as the goal the speech of the graduate of a Latin-American high school.

***8a-8b SPANISH CONVERSATION (2-2)**

Two class hours and one lab hour per week.

Prerequisites: 8a—Successful completion of two semesters of college-level work in Spanish or the equivalent. 8b—Completion of three semesters of college-level Spanish. Native speakers not eligible.

Practice in conversation based on Spanish customs and culture.

***25a-25b ADVANCED SPANISH (3-3)**

Three class hours per week.

Prerequisite: 25a—Spanish 4; 25b—Spanish 25a.

Oral and written composition, class reading of works of Spanish and Spanish-American literature, extensive collateral reading of varied types of Spanish and Spanish-American literature, and study of a review of grammar.

***29 HISPANOAMÉRICA CONTEMPORÁNEA**

Three class hours per week.

Prerequisites: Spanish 25a-25b, Spanish speaking background, or consent of the instructor.

A study of contemporary Latin-American culture, its problems and concerns, as revealed in contemporary literature: short story, drama, and novel. To be given in Spanish to students of Spanish background or to qualifying students.

***30 INDIVIDUAL READING (1-2)**

Conferences for oral reports. Time to be arranged. A minimum of three hours of reading per unit per week is required.

Prerequisite: Spanish 25b or permission of the instructor.

Reading of Spanish and Latin-American classics and contemporary literature.

May be repeated for credit.

§100a CONVERSATIONAL SPANISH, ELEMENTARY (2)

Three class hours per week.

A practical course in the Spanish language approached by way of conversation. Intensive drill in the patterns and idioms of daily speech is supported with sufficient grammar to give flexibility in the spoken language.

This course will not fulfill language requirement at California State Colleges or at the University of California.

*Day only.

§Evening only.

§100b CONVERSATIONAL SPANISH, ADVANCED ELEMENTARY (2)

Three class hours per week.

Prerequisite: Spanish 100a or equivalent.

Further work in conversation following the model of Spanish 100a.

This course will not fulfill language requirement at California State Colleges or at the University of California.

§100c CONVERSATIONAL SPANISH, INTERMEDIATE (2)

Three class hours per week.

Prerequisite: Spanish 100b or equivalent.

More advanced work in conversation following the model of Spanish 100b.

This course will not fulfill language requirement at California State Colleges or at the University of California.

§100d CONVERSATIONAL SPANISH, ADVANCED INTERMEDIATE (2)

Three class hours per week.

Prerequisite: Spanish 100c or equivalent.

Further advanced work in conversation following the model of Spanish 100c.

This course will not fulfill language requirement at California State Colleges or at the University of California.

Speech

1a FUNDAMENTALS OF SPEECH AND PERSUASION (3)

Three class hours and one hour of speech laboratory per week.

Practice in delivering extemporaneous speeches; study of basic principles of effective communication, techniques of organizing and outlining, structure and content of basic speech types; development of critical listening; analysis and evaluation of speeches.

2a-2b FUNDAMENTALS OF ORAL INTERPRETATION OF LITERATURE (3-3)

Three class hours and one hour of speech laboratory per week.

Prerequisite: Speech 2b—Speech 2a.

The oral reading of different forms of literature (poetry, short story, drama); analysis of meaning; analysis of voice quality, enunciation, pronunciation and expressiveness; performances for audiences and recording.

***4 ARGUMENTATION AND DEBATE (3)**

Three class hours and one hour of speech laboratory per week.

Prerequisite: Speech 1a or permission of the instructor.

A course in the principles and techniques of argumentation and debate, research in significant social problems; analysis of issues, evidence and logic; oral presentation of arguments on research and organized reasoning.

***5 FORENSICS PARTICIPATION (1/2-1)**

Participation in approved intercollegiate forensics contests.

May be repeated for credit.

***27 DISCUSSION (3)**

Three class hours and one hour of speech laboratory per week.

The study of the philosophy and practices of group discussion. The study and use of parliamentary procedures.

33 VOICE AND ARTICULATION (3)

Three class hours and one hour of speech laboratory per week.

An exploration of various modes of communicating ideas, emotions and values through a meaningful use of the voice. Lessons in vocal variety, expressiveness, resonance, articulation and pronunciation.

***49 SPECIAL PROJECTS (1-2)**

Hours by arrangement.

Prerequisites: Sophomore standing and permission of the English Division Chairman.

Students will investigate a topic in speech beyond the scope of present courses and present it in either project or written form.

***57a-57b SPEECH FOR FOREIGN STUDENTS (3-3)**

Three class hours and one hour of speech laboratory per week.

Prerequisite: Permission of the instructor.

Practice in pronunciation and diction; usage; extemporaneous speaking.

62 ELEMENTS OF SPEECH (3)

Three class hours and one hour of speech laboratory per week.

Frequent practice in extemporaneous speaking; exercises in fact-finding, language usage, pronunciation and diction. Emphasis is on individual abilities and needs in achievement of effective oral communication in daily life, business situations and community activities.

*Day only.

Student Government

1-2 STUDENT GOVERNMENT (1-1)

Attendance at weekly Student Council Meetings and individual work by arrangement.

Designed to assist Student Council members, commissioners, club officers, and other interested students in acquiring background and skills for effective participation in activities. Students may select and investigate relevant topics of special interest.

Technical Illustration

*52a TECHNICAL ILLUSTRATION (5)

Five three-hour periods per week plus two hours by arrangement.

Prerequisite: Concurrent enrollment in T.I. 54 or permission of instructor.

Study of the basic practices and procedures used in technical drawing with emphasis on ink line techniques and the different systems of projection used in technical illustration to develop three dimensional illustrations from two dimensional plans. Students will reproduce their drawings using the diazo process.

*52b TECHNICAL ILLUSTRATION (5)

Five three-hour periods per week plus two hours by arrangement.

Prerequisite: T.I. 52a or permission of instructor.

Working from sketches, blueprints, photographs, and actual objects, the student will produce technical illustrations, using appropriate techniques and types of projection. Emphasis will be on each student developing a professional portfolio.

*54 GRAPHIC DESIGN (3)

Three three-hour periods per week.

Prerequisite: Concurrent enrollment in T.I. 52a or permission of instructor.

Development of the creative approach to graphic design in technical art. Application of various systems of drawing and design principles to practical graphic problems which range in complexity from simple one sheet layouts to elaborate color presentations.

*55 VISUAL PRESENTATION (2)

Two three-hour periods per week.

Prerequisite: Concurrent enrollment in T.I. 52b or permission of instructor.

Application of the student's creative ability and drawing skills to the development of visual presentations. Emphasis will be on transparencies for the overhead projector and 35 MM slides. Each student will prepare, and present before the class, a sequence of visuals on a designated subject.

***63 GRAPHIC REPRODUCTION (2)**

Two three-hour periods per week.

Prerequisite: TJ. 52a or permission of instructor.

Study of the basic practices and procedures used in industry to reproduce drawings. Emphasis will be on the offset printing process. Students will reproduce their own graphic designs using the complete offset printing facilities of the department. Laboratory sessions will also be held on stencil, mimeo, diazo, and photo lithography.

***64 INDUSTRIAL DESIGN (3)**

Three three-hour periods per week.

Prerequisites: Concurrent enrollment in TJ. 52b or permission of instructor.

Introduction to the sequence of concept drawings and models involved in producing an industrial design. Laboratory experience in idea interpretation and finished presentation drawings.

§100 INTRODUCTION TO TECHNICAL ILLUSTRATION (3)

Two three-hour periods per week including two hours of lecture and four hours of lab.

Prerequisite: Knowledge of drafting fundamentals as shown by portfolio.

To provide students with information and experience in the creation of technical illustrations.

Technology

***71 SCIENCE FOR TECHNICIANS (3)**

Three lecture hours per week.

A study of applied physics phenomena as related to simple devices including forces, stress, moments acceleration, velocity, friction, energy; applied chemical phenomena including the properties of bases and acids, oxidation and reduction, and properties of common elements in industry.

***72 INDUSTRIAL MATERIALS (2)**

Two lecture hours per week.

Prerequisite: Concurrent enrollment in Technology 74 recommended.

*Day only.

§Evening only.

A required related course of instruction for several departments in the Technician Division. Study of metals common to industry, basic mining techniques, structures, physical and chemical properties and uses. Involves study of lattice structure, alloy systems, mechanical tests and characteristics of strength, elasticity, ductility, malleability, etc., heat treatment and surface coatings. Plastics, rubber, glass and ceramics as they apply to industry.

***74 INDUSTRIAL PROCESSES (3)**

Three lecture hours per week.

A required related course of instruction in several departments in the Technician Division. Designed to extend the students' background of related information pertaining to the processing of common industrial materials, including the removing, shaping and joining of metals, as well as the processing of plastics, rubber, glass and some exotic materials currently in use in local industries.

***75 WELDING FOR TECHNOLOGY (2)**

One lecture hour and one three-hour shop period per week.

A related course of instruction designed to assist the student who is not a Welding major in understanding the theories of oxyacetylene, bronze, arc and TIG welding, silver brazing with emphasis on associated equipment and supplies.

***76 MACHINE SHOP FOR TECHNOLOGY (2)**

One lecture hour and one three-hour shop period per week.

Basic bench work in steels and aluminum, drilling, taping, reaming, lathe operation and advanced work according to the student's ability.

90a-90b ELEMENTS OF SURVEYING (3-3)

Taught by Engineering staff. For content and prerequisite, see Engin. 90a-90b.

§191 LAND SURVEYING LICENSE (BOUNDARY CONTROL) (3)

Three lecture hours per week.

Prerequisite: High-School-Level mathematics which include plane Geometry, Trigonometry and Algebra. Engineering 90b or experience in the field of surveying, or permission of the instructor.

Course is designed for persons employed in surveying who wish to take formal instruction in preparation for the California State Land Surveying License examination. Particular emphasis will be placed upon boundary control and legal principles of surveying.

§192 LAND SURVEYING LICENSE (PUBLIC LANDS) (3)

Three lecture hours per week.

Prerequisite: Tech. 191 or activity in land surveying, title insurance or other related field, or permission of the instructor.

Course is designed for persons employed in surveying who wish to take formal instruction in preparation for the California State Land Surveying License examination. Particular emphasis will be placed upon U.S. Government lands and property location.

Telecommunications

*15 TELEVISION NEWS PRODUCTION (3)

One lecture hour and two three-hour lab periods per week.

Technical production and writing of television news programs to meet the standards for a career in the television field. Students will be members of the production staff, technical and editorial, and of the television news program.

*51 INTRODUCTION TO BROADCASTING (3)

Three lecture hours per week.

An introduction to the radio and television broadcasting industry, its nature, organization, history, operation, regulation, programming and business procedures. A study of educational broadcasting is also included.

52a-52b RADIO STUDIO TECHNIQUES (3-3)

One lecture hour and two three-hour lab periods per week. (Lab periods to be arranged.)

Prerequisite: 52a—none; 52b—Telecommunications 52a.

The study of the basic practices and procedures in radio broadcasting such as the proper use of microphones, operation of audio mixing consoles, tape recorders and other common broadcast equipment with emphasis on combo and engineer-announcer types of programs. The students will operate the radio broadcast station KCSM-FM and the television broadcast station KCSM-TV as part of their laboratory assignment.

*54a-54b RADIO CODE AND AMATEUR LICENSE (2-2)

Three hours of code practice and one three-hour lab period per week.

Instruction in recognition of the various characters of Morse Code. Practice in pencil copy of incoming tape and hand-sent material, and in sending code. Theory instruction will be toward passing the written FCC examination.

60a-60b TELEVISION STUDIO TECHNIQUES (3-3)

One lecture hour and two three-hour lab periods per week. (Lab periods to be arranged.)

*Day only.

§Evening only.

Prerequisite: 60a—none; 60b—Telecommunications 60a.

A study of the equipment used in a television studio with emphasis on lighting, camera operation, audio control board operation, video mixing, video tape recording and production work. The students will operate the radio broadcast station KCSM-FM and the television broadcast station KCSM-TV as a part of their laboratory assignment.

61a-61b-61c PROJECTS IN RADIO-TV PRODUCTION (3-3-3)

One lecture hour and two three-hour supervised periods per week.

Prerequisites: Telecommunications 52a-52b, or 60a-60b, or 101a-101b, and permission of instructor.

An introduction to radio and television production with supervised activity in the planning of program material and program production. Productions that are suitable for broadcasting and televising will be produced over the radio broadcast station KCSM-FM and the television broadcast station KCSM-TV.

*65a-65b COMMERCIAL LICENSES (3-3)

Two three-hour lecture/recitation periods per week.

The basic material covered will be that outlined by the Federal Communications Commission as a study guide for the second-class and first-class telephone license.

*66 RADIO ANNOUNCING AND MICROPHONE TECHNIQUES (3)

Two class hours per week and one additional hour per week by arrangement.

Theoretical introduction of the basic announcing skills, basic principles of effective speaking, development of critical listening, analysis and evaluation of speeches, practice in reading typical kinds of radio copy, practice in speaking ad lib, announcing and microphone techniques developed through regular use of the radio broadcasting equipment.

§67a-67b RADIO AND TELEVISION ANNOUNCING (3-3)

One lecture-discussion hour and two three-hour lab periods per week. (Lab periods to be arranged.)

Prerequisites: Telecommunications 51 and Telecommunications 66 or professional experience with permission of instructor.

Practice in announcing news, commercial material and music continuity, ad lib announcing, control room operation, application of Federal Communications Commission logging rules and international phonetic alphabet. The lecture-discussion will be a critical analysis of the announcing performance of the students. The students will do the major portion of the announcing in the radio broadcast station

KCSM-FM and the television broadcast station KCSM-TV as part of their laboratory assignment.

§70 MOTION PICTURE PRODUCTION TECHNIQUES (3)

One lecture hour and two three-hour lab periods per week.

An introduction to the basic photographic and cinematographic techniques used in television and motion picture production. The course will include graphics for television, lighting sound-on-film techniques and newsfilm techniques, including script writing. The student will devote part of his laboratory work to outside on-location photography.

A lab fee will be charged for supplies.

***71 RADIO AND TELEVISION NEWS EDITING AND WRITING (3)**

Three lecture hours per week.

Three hours of lecture devoted to instructing the student in handling of wire copy, rewriting, the oral writing style, putting the newscast together for air, good taste in reporting, libel and slander laws, use of the tape recorder and the "beeper" telephone, and writing for still pictures and film.

***72 TELEVISION NEWS PRODUCTION (3)**

One lecture hour and two three-hour lab periods per week.

Technical production and writing of television news programs to meet the standards for a career in the television field. Students will be members of the production staff, technical and editorial, and of the television news program.

§101a-101b RADIO AND TELEVISION TECHNICAL OPERATIONS AND MAINTENANCE (3-3)

One lecture hour and two three-hour lab periods per week. (Lab periods to be arranged.)

Prerequisites: Adequate background experience.

Construction, installation and maintenance of equipment used in the radio broadcast station KCSM-FM and the television broadcast station KCSM-TV, and related studio equipment, including lighting, microphone circuits, intercommunication equipment, audio and video console equipment, video tape recorders. FM transmitters and television transmitters.

§104a-b RADIO CODE - AMATEUR LICENSE (2-2)

(See "Electronics Technology.")

§105a-105b COMMERCIAL LICENSES (3-3)

(See "Electronics Technology.")

Trade and Industrial

Classes of related training are offered for indentured appren-

**Day only.*

§Evening only.

tics in certain trades as indicated below. These classes follow the course outlined by the State Bureau of Apprenticeship Standards and are open only to indentured apprentices.

§62 CONTRACTOR'S LICENSE AND LAW (3)

Prerequisite: Experience in the construction field.

An introduction to the legal requirements for a contractor's license and a study of his obligations to his clients.

§63a, 63b, 63c, 63d, 63e, 63f BUILDING INSPECTION (3-3-3-3-3-3)

§85 CARPENTRY (APPRENTICESHIP) (1)

§87 ELECTRICAL WIRING (APPRENTICESHIP) (1-2½)

§91 PLUMBING (APPRENTICESHIP) (1-3½)

§95 TOOL AND DIE MAKING (APPRENTICESHIP) (1)

§97 SHEETMETAL (APPRENTICESHIP) (1-2½)

Welding Technology

***51 APPLIED WELDING MATHEMATICS (3)**

Three lecture hours per week.

Areas, volumes, logarithmic calculations, slide rule calculations and weight; fundamentals of algebra, calculation of irregular areas and volumes.

***52a-52b ELEMENTARY WELDING THEORY (4-4)**

Four lecture hours per week.

Prerequisite: W.T. 52a—none; W.T. 52b—completion of W.T. 52a.

Introduction to gas and conventional arc welding of ferrous and non-ferrous metals, brazing and other methods of joining metals. Reading and interpretation of blueprints with emphasis on welding symbols, multiview drawings, and tolerances.

***52aL-52bL ELEMENTARY WELDING PRACTICE (4-4)**

Four three-hour periods per week.

Prerequisite: W.T. 52aL—none; W.T. 52bL—completion of W.T. 52aL.

Practical experience in gas and conventional arc welding of ferrous and non-ferrous metals, brazing and other methods of joining metals.

***62a-62b ADVANCED WELDING THEORY (3-3)**

Three lecture hours per week.

Prerequisite: W.T. 52a-b.

TIG (Heliarc), MIG welding with emphasis on exotic metals and other advanced problems in all phases of welding. Study in the theory of metallurgy and heat treating as it applies to welding technology.

***62aL-62bL ADVANCED WELDING PRACTICE (5-5)**

Three four-hour periods and one three-hour period per week.

Prerequisites: Concurrent enrollment in W.T. 62a-b.

Practical experience in TIG (Heliarc), MIG welding with emphasis on the exotic metals and other advanced problems in all phases of welding. Practical experience in job estimating and production welding techniques as well as maintenance welding techniques.

§102a-102b ARC WELDING TECHNOLOGY (2-2)

One hour of lecture and three hours of laboratory per week.

*Day only.

§Evening only.

Prerequisites: 102a—Previous welding course or industrial experience, or Tech. 165 or Tech. 75. 102b—102a; not to be taken concurrently with W.T. 103a-103b.

Designed to prepare a student for entrance into industry. All aspects of arc welding with various metals are thoroughly covered. Conventional arc welding in the flat and vertical positions is covered in 102a. Low hydrogen welding in the flat and vertical positions is covered in the 102b section. Basic metallurgy is included to broaden the training program.

§103a-103b TIG WELDING TECHNOLOGY (2-2)

One hour of lecture and three hours of laboratory per week.

Prerequisites: 103a—Previous welding course or industrial experience, or Tech. 165, or Tech. 75; 103b—W.T. 103a.

Designed to prepare a student for entrance into industry. Welding of aluminum is covered in the 103a section and welding of steel and stainless steel is covered in the 103b section. The types of weldments made are corner, fillet and butt. Basic metallurgy is included to broaden the training program.

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