UNIVERSITY PROGRAMS

HONORS PROGRAM

Amanda Podany, Director

The Cal Poly Pomona Honors Program is designed to cultivate academic excellence, creativity, critical thinking, and independent research by providing a diverse and intellectually stimulating environment in which highly motivated students in all majors can come together and celebrate the fellowship of community. The Honors Program welcomes applications from entering freshmen who have a high school GPA of 3.5 or above and SAT verbal and math scores of 550 or higher, or who are in the top 5% of their graduating class. Students who have recently entered Cal Poly (as freshmen or transfer students) may also apply for the honors program if they have maintained a GPA of 3.5 or higher.

The Honors Program provides students with the opportunity to enroll in smaller–sized classes specifically for honors students. They also gain access to enriched academic advising and mentoring, chances to attend special programs and cultural events, and the benefit of participating in a community of high-achieving students. Honors program students are required to maintain a GPA of 3.3.

INTERDISCIPLINARY GENERAL EDUCATION (IGE)

Nancy Page Fernandez, Director

The Interdisciplinary General Education (IGE) Program is a team-taught, thematically integrated sequence of courses that meets many general education requirements in a stimulating intellectual environment. These requirements, which apply to all California State University campuses, help to broaden skills and understanding in areas beyond the major (such as social science, literature, composition). Usually these requirements are fulfilled by taking separate courses.

IGE addresses the need for an integrated approach to curriculum, teaching, and scholarship and the creation of an extended learning community.

FIRST YEAR (F,W,Sp)

IGE 120 Consciousness and Community (4)

First knowings, origin of consciousness, myth, symbol, performance, and ceremony; prehistory and patterns of living, making of meaning; university experience. 4 lecture discussions. Prerequisite: EPT score of 151 or better. Activity fee may be required.

IGE 121 Rationalism and Revelation: The Ancient World (4)

The nature of tragedy; the ways of warriors, prophets, tyrants, philosophers, and citizens; ethics, convictions, and the sacred. 4 lecture discussions. Prerequisite: IGE 120. Activity fee may be required.

IGE 122 Authority and Faith: The Medieval and Renaissance Worlds (4)

Visions of hell, politics, social order, and redemption; constructions of the sacred and secular selves; journey of the soul; private lives and public spaces. 4 lecture discussions. Prerequisite: IGE 121. Activity fee may be required.

SECOND YEAR (F,W,Sp)

IGE 220 Ways of Knowing: Culture and Contact (4)

Explorations of the multiple ways of constructing knowledge (science, art, the sacred as ways of knowing); knowledge as historically grounded in the era of the New World colonial conquest (national artistic cultures, scientific revolution, indigenous sacred articulations of space and time, perceptions of Self and Other). 4 lecture discussions. Prerequisite: IGE 122. Activity fee may be required.

IGE 221 Ways of Coexisting: Reform and Revolution (4)

Explorations of urban and global issues (social space; domination, resistance, and revolution; traditional/transitional cultures). Inquiries are historically grounded in the Enlightenment era (rise of individual rights, spirit of revolution, restructuring social, conceptual, and scientific structures). 4 lecture discussions. Prerequisite: IGE 220. Activity fee may be required.

IGE 222 Ways of Doing: The Industrial Age (4)

Explorations of technology and human purpose; science and scientists; divergent thinking, gender, genius, and anomalies; emergent ethical frameworks; inquiries are historically grounded in the Industrial Age; individual and collective ideologies; romanticism and realism. 4 lecture discussions. Prerequisite: IGE 221. Activity fee may be required.

THIRD YEAR (F,W)

IGE 223 Ways of Living: The Contemporary World (4)

Explorations of environmental epistemology, ethics, aesthetics, and biographies; communities and cultures which offer life-enhancing practices; environmental education and responsibility; inquiries are historically grounded in the modern and postmodern worlds; global thinking and doing. 4 lecture discussions. Prerequisite: IGE 222. Activity fee may be required.

IGE 224 Connections Seminar: Exploration and Personal Expression (4)

Research and presentation of an interdisciplinary project which extends and synthesizes themes from the IGE experience. 4 lecture discussions. Prerequisite: IGE 223

INTERNATIONAL PROGRAMS

Randall L. Burger, Coordinator of International Programs

These course designations serve Cal Poly Pomona students participating in Cal Poly Pomona Exchange Programs or in CSU International Programs (IP) overseas as vehicles for residence credit and are administered by the International Center.

IPC 198 Foreign Study Topics (1–6)

Study undertaken in a foreign university under the auspices of The California State University International Programs or Cal Poly Pomona Exchange Programs.

IPC 398 Foreign Study Topics (1–6)

Study undertaken in a foreign university under the auspices of The California State University International Programs or Cal Poly Pomona Exchange Programs.

IPC 598 Foreign Study Topics (1–6)

Graduate study undertaken in a foreign university under auspices of The California State University International Programs or Cal Poly Pomona Exchange Programs. Maximum credit 9 units.

GENERAL EDUCATION

The following 10 courses constituted Track A in previous catalogs. Track A has been discontinued as of Fall 1999.

GEN 101 Communication and Critical Thinking I (4)

Study and practice of methods of inquiry and forms of written and oral communication in the disciplines and fields of modern knowledge. Selected examples from the humanities, arts, natural sciences, social sciences, and professions. Introduction to the university as a place of cultural actions and knowledge. Frequent papers and oral presentations. Emphasis on self-reflection and exposition. 4 discussions/problem-solving.

GEN 102 Communication and Critical Thinking II (4)

This course should build on what students have explored in GEN 101 and continue the study and practice of forms of written and oral communication in the various disciplines. Students will explore the different methods of research, critical thinking, analysis and persuasion as they extend beyond the university and apply to issues of public importance and current events. 4 discussions/problem-solving. Prerequisite: GEN 101.

GEN 103 Communication and Critical Thinking (4)

Capstone for GEN 101 and 102, Communication and Critical Thinking. Frequent papers and oral presentations. Integrates content knowledge and process knowledge. 4 discussions/problem-solving. Prerequisites: GEN 101 and 102.

GEN 104 The Human Conscience and Spirit (4)

A cross-cultural, multidisciplinary examination of significant recurrent themes from a variety of historical, literary, philosophical, and religious sources that exemplify alternative human responses to common life experiences and ways of resolving fundamental spiritual and moral issues. 4 lectures/problem-solving.

GEN 105 Political Authority and Change (4)

The study of political authority and change in the context of world cultures. Emphasis is given to institutions, cultural perspectives, the individual in relation to authority, social movements, and political authority at the global level. 4 lectures/problem-solving. Prerequisites: GEN 101, 102, 103.

GEN 106 Creativity, Technology, and Society (4)

An examination of the moral, aesthetic, and social dimensions of human invention. Selected cultural and historical examples. Emphasis on historical, philosophical, and literary methods of inquiry and analysis. 4 lectures/problem-solving. Prerequisites: GEN 101, 102, and 103.

GEN 107/107A World Cultures IV: Fine and Performing Arts – Intention, Process and Product (4)

Multidisciplinary exploration, on a global scale, of the fine and performing arts drawn from the disciplines of architecture, art, dance, landscape architecture, music and theatre. Emphasis on interdisciplinary dialog on artistic intention, process and product. Instruction is by lecture, activity, or a combination of both.

GEN 108 Consumers, Producers, and Economic Institutions (4)

An interdisciplinary introduction to the concepts and the empirical and normative theories of economic practices, institutions, and outcomes. An analysis of economic and social problems from economic, historical, and philosophical points of view. 4 lectures/problem-solving. Prerequisites: GEN 101, 102, 103.

GEN 109 Readings in Human Behavior and Nature (4)

A multidisciplinary examination of the complex "nature" of the human animal. Guided exploration of the literature pertaining to the biological, social, and environmental factors underlying human behavior. An evolutionary, cross-cultural, and cross-species investigation into the uniqueness of humankind. 4 lectures/problem-solving. Prerequisites: GEN 101, 102, 103.

GEN 110 The Individual in a Diverse Society (4)

Introduces social theory relevant to the challenge and promise of diverse societies, identifies one disciplinary approach (varies from section to section) to contemporary issues of diversity, and engages students in experiential group activities designed to heighten awareness of individual diversity in society. 4 lectures/problem-solving.

NATIONAL STUDENT EXCHANGE

Peggy Madigan, Coordinator

These course designations serve Cal Poly Pomona students participating in the National Student Exchange Consortium at various universities and colleges in the United States as vehicles for Cal Poly Pomona residence maintenance.

NSE 198 National Student Exchange Study Topics: (1–15)

Study undertaken at a member campus of the National Student Exchange Consortium.

NSE 398 National Student Exchange Study Topics: (1–15)

Study undertaken at a member campus of the National Student Exchange Consortium.

LIBRARY

Harold B. Schleifer, Dean

Library Instruction/Information Competence

The Library's program for Information Competence is designed to introduce students to the basic sources and library research strategies needed for a specific course or assignment. The presentations are designed for the particular course assignment, while also emphasizing general principles applicable to future information gathering needs in support of lifelong learning. During the presentation, the librarian will illustrate to the students how to think critically about their information needs, as well as how to evaluate sources of information for relevance, reliability and objectivity. We offer instructional sessions in a computerized classroom that allows for the demonstration and hands on learning of library resources. The class period may include the following: introduction to library services and collections; the Library Catalog; periodical indexes and databases in various formats -- print, online, CD-ROM; internet resources; use of reference books and other library materials. Students receive printed bibliographies listing important sources or procedures. We also offer indivdual instruction, web based tutorials, and printed guides. Instructors may schedule classes by calling the Reference/Instruction/Collections office at (909) 869-3076. or via the web at <http://www.csupomona.edu/~library/html/teachingservices.html>

MILITARY SCIENCE

Captain Chuepheng C. Lo, Officer in Charge

MS 101/101L Introduction to ROTC and the University (2/0)

Make your first new peer group at college one that is committed to perform well and enjoy the experience. Increase self-confidence

through team study and activities in basic drill, physical fitness, rappelling, leadership reaction course, first aid, making presentations and basic marksmanship. Learn fundamental concepts of leadership in a profession in both classroom and outdoor laboratory environments. One hour and a required leadership lab, MS101L, plus optional participation in a one hour session for physical fitness. Participation in a weekend exercise is optional, but highly encouraged (and fun!).

MS 102/102L Introduction to Leadership (2/0)

Learn/apply principles of effective leading. Reinforce self-confidence through participation in physically and mentally challenging exercises with upper division ROTC students. Develop communication skills to improve individual performance and group interaction. Relate organizational ethical values to the effectiveness of a leader. One hour and a required leadership lab, MS102L, plus optional participation in a one hour session for physical fitness. Participation in a weekend exercise is optional, but highly encouraged.

MS 103/103L Continuation of MS 102 (2)

MS 201/201L Self/Team Development (2/0)

Learn/apply ethics-based leadership skills that develop individual abilities and contribute to the building of effective teams of people. Develop skills in oral presentations, writing concisely, planning of events, coordination of group efforts, advanced first aid, land navigation and basic military tactics. Learn fundamentals of ROTC is Leadership Development Program. Two hours and a required leadership lab, MS 201L, plus required participation in a two one-hour sessions for physical fitness. Participation in a weekend exercise is optional, but highly encouraged.

MS 202/202L Individual/Team Military Tactics (2)

Introduction to individual and team aspects of military tactics in small unit operations. Includes use of radio communications, making safety assessments, movement techniques, planning for team safety/security and methods of pre-execution checks. Practical exercises with upper division ROTC students. Learn techniques for training others as an aspect of continued leadership development. Two hours and a required leadership lab, MS 202L, plus required participation in two one-hour sessions for physical fitness. Participation in a weekend exercise is optional, but highly encouraged.

MS 203/203L Continuation of MS 202 (2)

MS 101L, 102L, 103L, 201L, 202L and 203L Leadership Laboratory (0)

Open only to (and required of) students in the associated Military Science course. Series, with different roles for students at different levels in the program. Learn and practice basic skills. Gain insight into Advanced Course in order to make an informed decision whether to apply for it. Build self-confidence and team-building leadership skills that can be applied throughout life.

MS 179L Basic Course Physical Fitness (1)

Only open to students in MS 101, 102, 201 and 202. Optional in MS 101, MS 102 and MS 103; required in MS 201, MS 202 and 203. Series, with different roles for students at different levels in the program. Participate in and learn to lead a physical fitness program. Emphasis on the development of an individual fitness program and the role of exercise and fitness in one is life.

MS 210 Leadership Training (0)

A six-week summer camp conducted at an Army post. The student receives pay. Travel, lodging and most meal costs are defrayed by the Army. The environment is rigorous, and is similar to Army Basic Training. No military obligation incurred. Open only to students who have not taken all six of MS 101, 102, 103, 201, 202 and 203, and who pass a physical examination (paid for by ROTC). Completion of MS 210 qualifies a student for entry into the Advanced Course. Three different cycles offered during the summer, but spaces are limited by the Army. Candidates can apply for a space any time during the school year prior to the summer. Pass/Fail grade only.

The Advanced Course consists of the courses MS 301, 302, 303, 310, 401, 402 and 403

It is open only to students who have completed the Basic Course or earned placement credit for it (various methods). The Advanced Course is designed to qualify a student for a commission as an officer in the United States Army. Students must complete all courses numbered greater than 300, to include MS 310, a five-week Advanced Camp in the summer, usually between the junior and senior years. The courses must be taken in sequence unless otherwise approved by the Professor of Military Science. Students receive $150 per month during the school year.

MS 301/301L Leading Small Organizations I (2)

Series of practical opportunities to lead small groups, receive personal assessments and encouragement, and lead again in situations of increasing complexity. Uses small unit defensive tactics and opportunities to plan and conduct training for lower division students both to develop such skills and as vehicles for practicing leading. Three hours and a required leadership lab, MS 301L, plus required participation in three one-hour sessions for physical fitness. Participation in one weekend exercise is also required, and one or two more weekend exercises may be offered for optional participation.

MS 302/302L Leading Small Organizations II (2)

Continues methodology of MS 301. Analyze tasks; prepare written or oral guidance for team members to accomplish tasks. Delegate tasks and supervise. Plan for and adapt to the unexpected in organizations under stress. Examine and apply lessons from leadership case studies. Examine importance of ethical decision making in setting a positive climate that enhances team performance. Three hours and a required leadership lab, MS 302L, plus required participation in three one-hour sessions for physical fitness. Participation in one weekend exercise is required; two other weekend exercises optional.

MS 303/303L Continuation of MS 302 (2)

MS 310 ROTC Advanced Camp (0)

A five-week camp conducted at an Army post. Only open to (and required of) students who have completed MS 301 and 302. The student receives pay. Travel, lodging and most meal costs are defrayed by the U.S. Army. The Advanced Camp environment is highly structured and demanding, stressing leadership at small unit levels under varying, challenging conditions. Individual leadership and basic skills performance are evaluated throughout the camp. Although this course is graded on a Pass/Fail basis only, the leadership and skills evaluations at the camp weigh heavily in the subsequent selection process that determines the type commission and job opportunities given to the student upon graduation from ROTC and the university.

MS 401/401L Leadership Challenges and Goal-Setting (2)

Plan, conduct and evaluate activities of the ROTC cadet organization.

Articulate goals, put plans into action to attain them. Assess organizational cohesion and develop strategies to improve it. Develop confidence in skills to lead people and manage resources. Learn/apply various Army policies and programs in this effort. Three hours and a required leadership lab, MS 401L, plus required participation in three one-hour sessions for physical fitness. Participation in one weekend exercise is also required, and one or two more weekend exercises may be offered for optional participation.

MS 402/402L Transition to Lieutenant (2)

Continues the methodology from MS 401. Identify and resolve ethical dilemmas. Refine counseling and motivating techniques. Examine aspects of tradition and law as relate to leading as an officer in the Army. Prepare for a future as a successful Army lieutenant. Three hours and a required leadership lab, MS 402L, plus required participation in three one-hour sessions for physical fitness. Participation in one weekend exercise is also required, and one or two more weekend exercises may be offered for optional participation.

MS 403/403L Continuation of MS 402 (2)

MS 301L, 302L, 303L, 401L, 402L and 403L Advanced Course Leadership Laboratories (0)

Open only to students in the associated Military Science course. Series, with different roles for students at different levels in the program. Involves leadership responsibilities for the planning, coordination, execution and evaluation of various training and activities with Basic Course students and for the ROTC program as a whole. Students develop, practice and refine leadership skills by serving and being evaluated in a variety of responsible positions.

MS 179L Advanced Course Physical Fitness (1)

Only offered to (and required of) students in MS 301, 302, 303, 401 402 and 403, of which this program is an integral part. Series, with different roles for students at different levels in the program. Participate in and learn to plan and lead physical fitness programs. Develops the physical fitness required of an officer in the Army. Emphasis on the development of an individual fitness program and the role of exercise and fitness in one is life.

CAL POLY POMONA UNIVERSITY

The CPU designation means that such courses are offered for the entire university community regardless of major or school. Many CPU courses have been specifically designed to meet the requirements of general education or to assist students in career/academic choices. For further information in CPU coursework please contact the Office of Academic Programs, Building 98.

GENERAL EDUCATION COURSES

CPU 201/201A Exercise, Nutrition and Fitness for Modern Society (3/1)

Importance of good nutrition, circulorespiratory and muscular endurance, strength and flexibility for adult health. Role of exercise and nutrition in control/prevention of cardiovascular disease, obesity and stress-related illness. Rationale for and participation in various adult fitness activities. Team-taught. 3 lectures, 2 one-hour activities. Corequisites: CPU 201/201A.

CPU 210/210A Actualized Living (3/1)

Lifelong physiological and socio-psychological aspects of the leisure phenomenon. Experience in assessing student's leisure knowledge and habits coupled with a comprehensive leisure counseling follow-through. Includes a one unit component in death and dying. Meets GE Area 3G. Team taught. 2 lectures, 1 lecture/discussion, 1 two-hour activity. Corequisites: CPU 210/210A.

EGR 402 Ethics and Engineering Decision-Making (4)

Explores the ethics of engineers: values; ethical theory and practice; moral reasoning; morality in law and codes; professional standards and societies. Case studies. Open to engineering majors, others as space permits. Team-taught. 4 lecture discussions. Prerequisites: senior standing, IE 401, and passing score on the GWT.

ACADEMIC/CAREER GUIDANCE COURSES

CPU 100 Career and Personal Exploration (4)

Systematic development of information about (1) self—including values, interests, and skills, (2) environment—including career clusters, fields and occupational information, (3) decision-making, and (4) career search techniques. Includes vocational testing and use of the computer-based System of Interactive Guidance and Information (SIGI PLUS). Materials fee required.

CPU 101 Introduction to the University (1–3)

This course offers first-time freshmen students an orientation to the university. The class concerns instruction in the structure of the university, scheduling classes, career planning and choice of major, use of the library, co-curricular programs, use of the advisory process, study skills, etc.

CPU 102 Fundamental Principles of Learning Skills (3)

Introduction to and practice in college study techniques and learning skills including: listening, notetaking, memory improvement, and time management. Topics discussed among others: class scheduling, career planning, use of the library and advisory centers, and co-curricular programs. 3 lecture discussions.

CPU 109 Fundamental Principles of Residential Leadership (2)

This course offers students an on-going orientation to effective residential leadership. The course covers the foundation of residential leadership, and current issues as they relate to community development. A special focus is placed on the individual student's growth as a leader by applying principles and concepts through experiential situations. The course concerns such topics as multicultural leadership, service learning, group leadership, transferable leadership skills, and logistical leadership. Prerequisite: permission of instructor. Instruction is by lecture, laboratory, or a combination.

CPU 299/299A/299L Special Topics for Lower Division Students (1–4)

Group study of a selected topic, the title to be specified in advance. Total credit limited to eight units, with a maximum of four units per quarter. Prerequisite: permission of instructor. Instruction is by lecture, laboratory, or a combination. Corequisites may be required.

CPU 499/499A/499L Special Topics for Upper Division Students (1–4)

Group study of a selected topic, the title to be specified in advance. Total credit limited to eight units, with a maximum of four units per quarter. Prerequisite: permission of instructor. Instruction is by lecture, laboratory, or a combination. Corequisites may be required.

ENVIRONMENTAL HEALTH SPECIALIST MINOR

The minor provides Biological Sciences majors, Agricultural Biology majors, and other majors with courses which prepare students for careers in the California Department of Health Services as Environmental Health Specialists. Increasing awareness of pollution and other health-related environmental problems has led to a demand for specialists to enforce and administer laws governing water, food, and air contamination, noise, land use planning, occupational health hazards, and animal vectors of disease. Many job opportunities exist in California for individuals trained as Environmental Health Specialists according to the California Department of Health Services.

The California Health and Safety Code outlines the standards for admission to the state internship program to become a registered specialist. The minimum educational qualifications are possession of a bachelor's degree from an approved institution with a minimum of 45 quarter units of basic science. The basic science requirement would be met by most students in Biological Sciences and in Agriculture. Students interested in more information may contact Dr. Richard Kaae or Dr. Lester Young (Horticulture/Plant and Soil Sciences Department), or Dr. John Chan (Biological Sciences Department).

Core Courses

Basic Biology	BIO	115/115L	(5)
General Chemistry	CHM	121/121L	(4)
General Chemistry	CHM	122/122L	(4)
Elements of Organic Chemistry	CHM	201	(3)
Fundamentals of Physics	PHY	102	(4)
College Algebra	MAT	105	(4)
Elementary Statistics with Applications	STA	120	(4)
Units			(28)

Support Courses

Required of all students:

Public Administration	PLS	314	(4)
Introduction to Arthropods	AGB	165	(4)
or			
Introduction to Entomology	ZOO	426/426L	(4)
Basic Microbiology	MIC	201/201	(5)
General Epidemiology	MIC	330	(4)
Units			(17)

Select 3 courses from the following:

Applied Microbiology	MIC	310/310L	(5)
Water Pollution Biology	BIO	420	(3)
Radiation Biology	BIO	431/431	(5)
Air Pollution Problems	CHM	460	(3)
Public Health Entomology	ZOO	435/435	(4)
Units			(10-14)

Select 3 courses from the following:

Pesticide and Hazardous Material Laws	AGB	301	(3)
Vertebrate Pest Management	AGB	323/323L	(4)
Produce Market Quality	AGB	325/325L	(4)
Urban Pest Management	AGB	342/342L	(4)
Units			(11-12)

Total units for the minor . . . . . (68-72)

PHYSIOLOGY MINOR

The Physiology Minor can be taken by students from any department in the University but it is particularly appropriate for students with the following majors: Animal Science (AS), Behavioral Science (BHS), Biology (BIO), Biotechnology (BTC), Chemistry (CHM), Electrical and Computer Engineering (ECE Biomedical Engineering), Foods and Nutrition (FN), Kinesiology and Health Promotion (KHP), Biology (BIO), Microbiology (MIC), and Zoology (ZOO). It is intended to assist students interested in physiology to discover and prepare for careers in: medicine; dentistry; veterinary science; high school teaching; graduate study in general or comparative physiology, kinesiology, exercise physiology or physiological psychology, and; allied health professions such as human and animal nutrition, exercise and health counseling, biomedical engineering, and domestic animal reproduction. It will do this by exposing students to the diversity of disciplines and careers available to people with an understanding of physiology. It will also provide them with a broad basic background and then permit them to tailor a program of advanced courses to suit their general interests and career goals. The program is administered by a steering committee composed of the following individuals: S. Bassin (KHP), D. Clark (ECE), E. Cogger (AVS), D. Lewis (HNFS), N. Harkey (BHS), D. Hoyt (BIO/ZOO), P. Mobley (CHM), and S. Eskandari (BIO/ZOO). Students interested in more information should contact Dr. Sepehr Eskandari.

Requirements

(Prerequisites listed in parentheses)

Assumed entry level skills: high school chemistry and algebra.

Core (required of all students)

Basic Biology (none)	BIO	115/115L	(5)
General Chemistry (none)	CHM	121/121L	(4)
General Chemistry (CHM 121/121L)	CHM	122/122L	(4)
Elementary Statistics with Applications	STA	120	(4)
Units			(17)

Restricted Electives

Anatomy (select one course)

Human Anatomy (BIO 115/115L)	ZOO	234/234L	(4)
Comparative Vertebrate Anatomy (ZOO 138/138L)	ZOO	451/451L	(5)
Anatomy & Physiology of Domestic Animals (BIO 115/115L)	AVS	350	(5)
Units			(4-5)

Physiology (select one course)

Human Physiology (BIO 115/115L)	ZOO	235/235L	(4)
Comparative Animal Physiology (ZOO 137/137L, 138/138L)	ZOO	424/424L	(5)
Units			(4-5)

Chemistry

Elements of Organic Chemistry or equivalent (CHM 122)	CHM	201	(3)
Elements of Organic Chemistry Lab (CHM 122)	CHM	250L	(1)
Units			(4)

Total Units, Restricted Electives . . . . . (12-14)

Advanced Physiology Courses

One or more courses from each of the following four clusters totalling at least 20 units. Two courses must be from outside the major school.

Physicochemical Principles

Elements of Biochemistry (CHM 201, CHM 250L)	CHM	321	(4)
Biochemistry (CHM 315, CHM 317)	CHM	327	(4)
Biochemistry (CHM 327)	CHM	328	(4)

Biochemistry (CHM 328)	CHM	329	(4)
Elements of Physical Chemistry (MAT 116, CHM 123, PHY 133)	CHM	304	(4)
Elements of Physical Chemistry (CHM 304)	CHM	305	(3)
Thermodynamics (PHY 132)	ME	301	(4)
Thermodynamics (ME 301, MAT 215)	ME	302	(4)
Fluid Mechanics (ME 215, PHY 132)	ME	311	(3)
Fluid Mechanics (ME 301, ME 311)	ME	312	(4)
Cellular Physiology (CHM 201)	BIO	435/435L	(4)
Advanced Cell Biology (BIO 435, CHM 327 or consent)	BIO	535	(4)
Biophysics (PHY 123 or consent)	PHY	410	(4)

Physiology

Neurosience (CHM 201/250L or CHM 314/317L)	BIO	424	(4)
Physiological Ecology (ZOO 424/424L or consent of instructor)	ZOO	440/440L	(4)
Endocrinology (CHM 327, ZOO 424/424L and/or consent)	BIO	520/520L	(4)
Renal Physiology (ZOO 424/424L)	BIO	521	(3)
Physiological Psychology (BHS 204, 205, PHY 202, 203)	PSY	303	(5)
Mammalian Endocrinology (AVS 350)	AVS	412	(4)
Physiology of Lactation (AVS 350 and AVS 412)	AVS	413	(3)
Reproductive Physiology of Food Animals (AVS 350 or ZOO 424/424L)	AVS	414	(4)
Avian Physiology (none)	PS	431	(3)
Biomedical Instrumentation and Measurements (BIO 115/115L, ECE 323 or ECE 333 or consent)	ECE	435	(3)
Biomedical Instrumentation and Measurements Laboratory (ECE 435 concurrent)	ECE	485	(1)

Nutrition

Nutrition (CHM 201, CHM 250L, ZOO 235/235L)	FN	235	(3)
Nutrition Lab (FN 235 concurrent)	FN	236	
Advanced Nutrition (CHM 321, FN 235, ZOO 235/235L)	FN	433	(4)
Nutritional Assessment-Biochemical (FN 433 concurrent)	FN	445	(2)
Advanced Nutrition (FN 433)	FN	434	(4)
Diet Therapy (FN 433, FN 445)	FN	443	(4)
Diet Therapy (FN 443)	FN	444	(3)
Animal Nutrition (CHM 321)	AVS	402	(4)
Ruminant Nutrition (CHM 321)	AVS	403	(4)
Advanced Nutrition (FN 434)	FN	533	(3)
Recent Advances in Nutrient Metabolism (consent)	FN	535	(2)
Nutrition Through the Life Cycle (FN 433)	FN	536	(3)
Biological Control Systems (upper division course in control systems)	EGR	588	(4)

Ergonomics

Physiology of Exercise (ZOO 235/235L)	KIN	303/303L	(3/1)
Lifespan Motor Development (Junior or Senior standing)	KIN	312/312A	(3/1)
Growth, Aging, and Physical Activity	KIN	365/365A	(3/1)
Biomechanical Kinesiology (KIN 302)	KIN	402/402L	(3/1)
Physiology of Exercise II (KIN 303/303L)	KIN	403/403L	(3/1)
Motor Learning & Human Performance (KIN 303/303L, 425/425A)	KIN	430/430L	(3/1)
Sports Medicine (KIN 303/303L)	KIN	455	(4)
Exercise Metabolism and Weight Control (KIN 303/303L, FN 205 or FN 235 and FN 236L)	KIN	456	(3)
Advanced Motor Learning & Human Performance (KIN 430/430L)	KIN	580	(3)
Advanced Motor Development (KIN 312/312A)	KIN	583	(3)

Total Units—Advanced Courses. . . . . (20)
Total Units—Minor . . . . . (49-51)

INTERDISCIPLINARY MINOR IN GEOGRAPHIC INFORMATION SYSTEMS

The interdisciplinary GIS Minor was created for Cal Poly Pomona students whose majors include engineering, business, design, science, urban planning, education, agriculture and geography, in an effort to create a GIS-literate campus. The minor serves students who are interested in the application of GIS to their area of knowledge, or who seek to develop their skills in GIS-related areas. GIS technology offers new and powerful ways of combining data, mapping and spatial analysis to support research, management and policy-making. GIS users are trained in spatial modeling and know how to manipulate digital data, create databases, and develop software. The GIS minor provides fundamentals of GIS for students without previous work in GIS, but allows for modifications to the core for students with prior experience.

Components of the program include: data acquisition and manipulation; development of spatial thinking and visualization skills; creation of models and use of analytic methods; programming; problem solving using applied GIS technology; learning to create effective output; process management; GIS theory and ethics; and an interdisciplinary focus.

For more information students may contact Dr. Francelina Neto (Department of Civil Engineering), Dr. Lin Wu (Department of Geography and Anthropology) Dr. Jeff Marshall (Department of Geology), Dr. Hollie Lund (Department of Urban and Regional Planning) or look on the web at <http://www.csupomona.edu/~gis_info>

Core Courses

Introduction to Interdisciplinary GIS Studies	EGR/ENV/CLS	215	(2)
Introduction to Geographic Information Systems	GEO	240/240A	(4)
Visual Basic for Geographic Information Systems	EGR	302/302A	(4)
Advanced Geographic Information Systems I	GEO	442/442A	(4)
Advanced Geographic Information Systems II	GEO	443/443A	(4)
Visual Basic for Geographic Information Systems	EGR	302/302L	(4)
Interdisciplinary Project in Geographic Information Systems I	EGR/ENV/CLS	494/A	(2)
Interdisciplinary Project in Geographic Information Systems II	EGR/ENV/CLS	495/A	(2)
Interdisciplinary Project in Geographic Information Systems III	EGR/ENV/CLS	496/A	(2)

Total Core Units 20

Electives

A 4-unit elective can be chosen from several departments, with the approval of the GIS Minor coordinator and the GIS advisor for the student's department.

Course Descriptions

EGR/ENV/CLS 215 Introduction to Interdisciplinary GIS Studies (2)

Interdisciplinary overview of applications in geographic information system (GIS) applications. Diagnostic assessment of student skills and development of study plans. Linkage of GIS to various disciplines. 2 hours lecture/discussion.

GEO 240/240A Introduction to Geographic Information Systems (3/1)

Concepts in the framework of geographic information systems. Basic techniques for the computer processing of geographical systems analysis and modeling. 3 hours lecture/problem-solving, 2 hours activity. Prerequisites: GEO 105/105A or permission of instructor.

EGR 302/302A Visual Basic for Geographic Information Systems (3/1)

Logical methods and techniques in algorithm development. The Visual Basic environment and Visual Basic programming. Structure of object oriented programs. Concept of class organization and manipulation. Programming Geographical Information Systems (GIS) related algorithms using Visual Basic and their integration in the GIS environment. 3 hours lecture/2 hour activities. Prerequisite: MAT106 or STA120.

GEO 442/442A Advanced Geographic Information Systems I (3/1)

Technical issues of geographic information, including data structure, database models, error estimation and product generation. 3 hours lecture/problem-solving, 2 hours activity. Prerequisite: GEO 240/240A or consent of instructor.

GEO 443/443A Advanced Geographic Information Systems II (3/1)

Applications in geographic information systems. Topics include resource management, urban planning, demographic and network applications and systems design and implementation. 3 hours lecture/problem-solving, 2 hours activity. Prerequisite: GEO 240/240A or consent of instructor.

EGR/ENV/CLS 494/494A Interdisciplinary Project in Geographic Information Systems I (1/1)

Problem-solving skills using GIS technology in a Fall/Winter/Spring sequence. Students design, manage and develop GIS projects in an interdisciplinary setting. Issue related to ethics, decision making, interdisciplinary applications and the visual display of information are addressed. 1 lecture discussion, 2 hours activity.

EGR/ENV/CLS 495/495A (1/1) – Interdisciplinary Project in Geographic Information Systems II

Problem-solving skills using GIS technology in a Fall/Winter/Spring sequence. Students design, manage and develop GIS projects in an interdisciplinary setting. Issue related to ethics, decision making, interdisciplinary applications and the visual display of information are addressed. 1 lecture discussion, 2 hours activity. Prerequisite: EGR/ENV/CLS 494/A.

EGR/ENV/CLS 496/496A (1/1) – Interdisciplinary Project in Geographic Information Systems III

Problem-solving skills using GIS technology in a Fall/Winter/Spring sequence. Students design, manage and develop GIS projects in an interdisciplinary setting. Issue related to ethics, decision making, interdisciplinary applications and the visual display of information are addressed. 1 lecture discussion, 2 hours activity. Prerequisite: EGR/ENV/CLS 495/A.

QUANTITATIVE RESEARCH MINOR

The Quantitative Research Minor may be taken by students having any major in the University other than Mathematics. This is particularly appropriate for students having majors in the following areas: Operations Management, Marketing Management, Agricultural Business Management, Animal Science, Behavioral Science, Economics, Political Science, Kinesiology, Biological Sciences, Urban and Regional Planning. The minor is intended to prepare students to perform quantitative analyses within their area of interest by providing the working knowledge required in statistics, principles of experimental design, survey and data analysis techniques. This includes learning to understand and use some of the statistical software packages available on computers. Students are expected to complete a project in their major having a significant quantitative component. The project is jointly directed by the Statistics Coordinator and a faculty advisor selected from the student's own department. Through such experience our graduates become more able and prepared to perform quantitative studies in their chosen field of employment. For more information students may contact any of the following reference sources: Dr. D. S. Gill (Statistics Coordinator), Dr. Melinda Burrill (Animal Science), Dr. John Korey (Political Science), Dr. Nancy Harkey (Behavioral Science), Dr. Ralph Miller (Technology and Operations Management), Dr. Vernon Stauble (Marketing Management), Mr. Charles Loggins (Urban and Regional Planning), Dr. David Moriarty (Biological Sciences), Dr. Stephen Bryant (Biological Sciences), Dr. Anne E. Bresnock (Economics), Dr. Wanda Rainbolt (Kinesiology and Health Promotion) or Dr. Arthur Parker (Agricultural Business Management).

Requirements

Core

Elementary Statistics with Applications	STA	120	(4)
Sampling Survey Methods	STA	310	(4)
Units			(8)

Intermediate (Choose one sequence)

Managerial Statistics	TOM	302	(4)
Advanced Managerial Statistics	TOM	380	(4)
Data Management for Agribusiness	FMA	375	(4)
Advanced Managerial Statistics	TOM	380	(4)
Statistics for Behavior Sciences	BHS	307/307A	(3/1)
Computer Methods in Behavior Science	BHS	340/340A	(3/1)
Statistics in the Behavioral Sciences	BHS	307/307A	(3/1)
Policy Analysis and Program Evaluation	PLS	417/417A	(3/1)
Statistical Computing	STA	210	(4)
Nonparametric Statistics	STA	320	(4)
Statistical Computing	STA	210	(4)
Biometrics	BIO	411	(3)
Planning Research Methods I	URP	331/331L	(4/2)
Planning Research Methods II	URP	332/332L	(4/2)
Economic Statistics	EC	321	(4)
Economic Statistics	EC	322	(4)
Econometrics	EC	421	(4)
Units			(7-12)

Applied Methods (Choose one course from each group)

GROUP I

Marketing Research I	IBM	408	(4)
Real Estate Market Analysis	FRL	483	(4)
Survey Research	SOC	433/433A	(3/1)

GROUP II

Project Design and Development	TOM	460	(4)
Experimental Psychology: Research, Design and Methodology	PSY	433/433L	(4/1)
Design of Experiments	STA	435	(4)

Units . . . . . (8-9)
Project

Students will do a quantitative research project in their major field of study. . . . . (4)

Total units for the minor. . . . . (27-32)

TOTAL QUALITY MANAGEMENT MINOR

The Total Quality Management (TQM) Minor may be taken by students having any major in the University. It is particularly appropriate for students having majors in the following areas: Technology and Operations Management, Industrial and Manufacturing Engineering, Management and Human Resources, International Business and Marketing. The Minor is intended to allow students to gain the knowledge and skills necessary for effective application of quality management techniques in manufacturing, service, and not-for-profit organizations. The Total Quality Management Minor will help fill the need for graduates, especially from business and engineering, who are trained in the concepts, techniques, tools and methods of analysis used for the continuous improvement of product, service, and process quality. Computer-based approaches are used wherever they are available and appropriate. For more information, students may contact any of the following faculty members: Dr. John Knox (Operations Management), Dr. Peggy Snyder (Management and Human Resources), and Professor Phil Rosenkrantz (Industrial and Manufacturing Engineering).

Core Requirements

Prerequisites (12–26 units)

Completion of one of the following prerequisite options is required. In most instances, the prerequisites listed in an option package are part of the existing curriculum for the student in the indicated academic program area.

OPTION 1: (Business, Engineering Technology, and some Science majors. Also, all majors not included in Options 2 and 3 below)

Elementary Statistics with Applications	STA	120	(4)
Operations Management	TOM	301	(4)
Managerial Statistics	TOM	302	(4)

OPTION 2: (Engineering, and some Science majors)

Analytic Geometry and Calculus I	MAT	114	(4)
Analytic Geometry and Calculus II	MAT	115	(4)
Analytic Geometry and Calculus 1II	MAT	116	(4)
Calculus of Several Variables I	MAT	214	(3)
Statistical Methods in Engineering and the Physical Sciences	STA	309	(4)
Engineering Probability and Statistics	IME	312	(4)

OPTION 3: (Mathematics majors)

Analytic Geometry and Calculus I	MAT	114	(4)
Analytic Geometry and Calculus II	MAT	115	(4)
Analytic Geometry and Calculus IH	MAT	116	(4)
Calculus of Several Variables I	MAT	214	(3)
Calculus of Several Variables II	MAT	215	(3)
Applied Probability Theory	STA	330	(4)
Applied Statistics	STA	331	(4)

Core Requirements (16 units)

(Note: OM majors are required to substitute a course outside their major, with minor advisor approval, for TOM 401.)

Processes and Measurement	IME	280	(4)
Total Quality Management	TOM	401	(4)
Quality Management	TOM	435	(4)
or Quality Control by Statistical Methods	IME	415	(4)
Total Quality Management Implementation	MHR	417	(4)

Directed Elective Courses (8 units)

Advanced Managerial Statistics	TOM	380	(4)
Material Requirements Planning	TOM	417	(4)
Production and Inventory Management	TOM	432	(4)
Materials and Inventory Management	TOM	433	(4)
Purchasing Management	TOM	434	(4)
Operations Management in Services	TOM	453	(4)
Just-In-Time Production	TOM	455	(4)
Project Design and Development	TOM	460	(4)
First Line Management	MHR	313	(4)
Training and Development	MHR	405	(4)
Advanced Organizational Behavior	MHR	438	(4)
Design of Experiments	IME	435/435L	(3/1)
Fundamentals of Human Factors Engineering/Laboratory	IE	225/225L	(3/1)
Principles of Productivity Engineering	IE	392	(3)
Reliability Concepts and Techniques	IE	419	(3)
Human Engineering in Design/Laboratory	ME	438/448L	(2/1)
Geometric Dimensioning and Tolerancing/Laboratory	MFE	323/323L	(2/1)
Intro to Computer Integrated Manufacturing/Laboratory	MFE	450/450L	(3/1)
Producibility Engineering	MFE	484	(3)
Advanced Human Factors in Engineering Design	EGR	539	(4)
Quality Assurance	ETP	375	(3)
Nondestructive Evaluation I	ETP	437/437L	(1/1)
Nondestructive Evaluation II	ETP	438/438L	(1/1)
Analysis of Variance and Design of Experiments	STA	435	(4)

TOTAL CORE & ELECTIVE UNITS REQUIRED . . . . . (24 units)

ATHLETIC DEPARTMENT

Karen L. Miller, Director of Athletics

Mike Ashman
Kimberly Connors
Dee DeRaleigh
Ron Fremont
Carlos Juarez
Sandy Kriezel
Ky Kugler
Wendy Nasmyth
David Ramirez
Tim Rapp
Jim Sackett
Paul Thomas
Chris Ward
Rosie Wegrich

The Department of Intercollegiate Athletics offers opportunities for men and women in a wide variety of sports, which include (m) baseball, basketball, cross country, soccer, tennis, track and field and (w) volleyball. The University is a member of the National Collegiate Athletic Association (NCAA), Division II and competes in the California Collegiate Athletic Association (CCAA) conference. These opportunities are open to all qualified students. The University has gained National and International recognition from the performances of its many outstanding athletic teams.

Mission Statement

The mission statement for the Department of Intercollegiate Athletics is an integral part of the educational environment of the total university which allows the student to develop mental, physical, social, and emotional discipline, to develop the ability to work with others, and to enhance decision-making and leadership skills. Intercollegiate Athletics can also serve as a university focal point for public relations and social interaction.

Course Descriptions

KIN 181–195 Competitive Athletics (2)

May be taken by those students who compete on an intercollegiate athletic team and may be repeated for additional credit as long as normal academic progress is maintained.

181 Intercollegiate Basketball (Women)

182 Intercollegiate Baseball

183 Intercollegiate Basketball (Men)

184 Intercollegiate Soccer (Women)

185 Intercollegiate Cross Country (Men)

186 Intercollegiate Soccer (Men)

190 Intercollegiate Tennis (Men)

191 Intercollegiate Track and Field (Men)

192 Intercollegiate Volleyball (Women)

193 Intercollegiate Cross Country (Women)

194 Intercollegiate Tennis (Women)

195 Intercollegiate Track and Field (Women)


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