Appendix 1

Comparison between the previous and the current Geology curricula

Previous Program

Required Courses (catalog number and title)

Liberal ed Reqs			51
CHEM 1100	Principles of Chemistry I	5	
CHEM 1110	Principles of Chemistry 2	5	
PHYS 2100	Basic Physics I	5	
PHYS 2110	Basic Physics 2	5	
MATH 1410	Calculus 1 (option in new plan) *	4	
MATH 1420	Calculus 2 (elective in new plan)	4	28

* Prequisite could also be met by MATH 1600 Statistics and a class in computer programming

GEOL 2100	Principles of Geology	3	
GEOL 2102	Principles of Geology Lab	1	
	Lower div electives (delete in new plan)	6	10
GEOL 3300	Paleontology (delete in new plan)	4	
GEOL 4380	Sedimentary rocks	4	
GEOL 4390	Stratigraphy (delete in new plan)	3	
GEOL 4300	Minerals and Crystals (delete in new plan)	3	
GEOL 4360	Structural Geology	4	
GEOL 4500	Field Geology	4	
GEOL 3400	Plate tectonics	4	26
Electives	A minimum of 12 units required		12
GEOL 4400	Applied Geology	4	
GEOL 3800	Optical Mineralogy	3	

Modified Program (current)

Required Courses (specify new and modified courses)

Liberal ed Reqs			51
MATH 1070	College Algebra (new addition) *	3	
MATH 1080	Trigonometry (new addition) *	3	
PHYS 2100	Basic Physics I	5	
CHEM 1100	Principles of Chemistry I	5	16

* Per advise of the Math Dept., the math pre-requisite could be satisfied by taking either MATH 1100 Precalculus or MATH 1410 Calculus 1

GEOL 2100	Principles of Geology	3	
GEOL 2102	Principles of Geology Lab	1	
GEOL 2200	History of Earth and Life	3	
GEOL 2202	History of Earth and Life Lab	1	8
GEOL 3250	Mineralogy	4	
GEOL 3810	Hydrogeology	4	
GEOL 4200	Igneous and Metamorphic Petrology	4	
GEOL 4350	Geophysical Exploration	4	
GEOL 4360	Structural Geology	4	
GEOL 4380	Sedimentary Rocks and Depos. Env.	4	
GEOL 4390	Paleontology and Stratigraphy	4	
GEOL 4400	Applied Geology	4	
GEOL 4500	Field Geology	4	
GEOL 4700	Plate tectonics	3	39
Electives	A minimum of 12 units required		12
GEOL 2500	Dinosaurs (new)	3	
GEOL 3050	Environmental Geology	4	

GEOL 4000	California Field Excursions	2
GEOL 4810	Develop & Mngmt Water Res.	4
GEOL 3000	Physical & Environmental Geology	4
GEOL 3600	Physical Oceanography	3
GEOL 2000	Regional Geology of California	3
GEOL 3500	Earthquakes and Volcanoes	3
GEOL 3100	Earth Science 1	3
GEOL 3110	Earth Science 2	3
GEOL 3700	Igneous and metamorphic rocks	4
GEOL 3810	Hydrogeology	3
GEOL 3900	Soil Geology	3
GEOL 4350	Geophysical Exploration	3
GEOL 4600	Geology of Petroleum	3
GEOL 4351	Advanced seismic interpretation	3
GEOL 4800	Advanced Theory of Hydrogeology	3

Total Number of Units = 127

GEOL 3500	Earthquakes and Volcanoes	3
GEOL 3600	Physical Oceanography	3
GEOL 3800	Optical Mineralogy	3
GEOL 3900	Soil Geology	3
GEOL 4000	Geologic Field Excursions	2
GEOL 4810	Develop & Mngmt of Water Res.	4
GEOG 4750	Geographic Information Systems	3
GEOG 4120	Geomorphology	3
PHYS 2110	Basic Physics 2	5
CHEM 1110	Principles of Chemistry 2	5
CHEM 3100	Environmental Chemistry	3
MATH 1410	Calculus 1	4
MATH 1420	Calculus 2	4

Total Number of Units = 126

Appendix 2

Baccalaureate Degree Audit Information

Baccalaureate Degree Audit Information

Department	Dept. of Physics and Geology
Degree	B.Sc. in Geology

Line	Proposed Program (# of units)	Description
1	51	University general education requirements
2	24	Prerequisites to the major
3	35	Upper-division
4		WP course (if not required in the major)
5	12	Other (if applicable) – Electives in the major
6	122	**TOTAL minimum units required** (add lines 1 through 5)
7	0	University elective units (subtract line 6 from line 8)
8	122 *	**TOTAL UNIT DEGREE REQUIREMENTS**
9	4	WP course required in the major Course prefix and number: GEOL 4500 units: 4
10	7	Lower-division prerequisite course(s) that may be applied toward GE Course prefix and number: __MATH 1070_____ units _ 3___ Course prefix and number: __GEOL 2100/2102_____ units _ 4___ Course prefix and number: Course prefix and number: Course prefix and number: Course prefix and number:
11	11	**TOTAL double-counted courses** (add lines 9 and 10)
12	111	**TOTAL units taken** (subtract line 11 from line 8)

* Units beyond 120 required by a degree program (e.g. accreditation requirement) remain in effect.

Prepared by	Horacio Ferriz
Date	1/20/09

Appendix 3

Curriculum Vitae of full-time faculty and description of faculty research

FACULTY RESEARCH INTERESTS

Dr. Giaramita is an expert in metamorphic petrology and structural geology, and his research interests have evolved in the direction of igneous geochemistry, field study, and tectonic implications of ophiolites.

Dr. Ferriz is an expert in engineering geology (including seismic engineering), hydrogeology, and volcanology, and his research interests have evolved in the direction of applied geology (engineering geology, hydrogeology, and geophysics).

Dr. Sankey is an expert in vertebrate paleontology, sedimentology, and stratigraphy. Her research interests have evolved in the direction of dinosaur paleontology, dinosaur evolution, extinction patterns, and climate change.

Dr. Rogers is an expert in neotectonics, and his research interests have evolved in the direction of geodesy, structural evolution of Central American terranes, and landscape evolution.

FACULTY RESUMES

Dr. Mario Giaramita

Marty Giaramita is the hard-rock geologist at C.S.U. Stanislaus. For his dissertation research (U.C. Davis) he examined minor chemical components in staurolite-zone pelitic schists and their implications for the nature of fluid-rock interactions during metamorphism. As a Postdoctoral Fellow at the Smithsonian Institution, Marty worked on 1) PT-conditions and fluid behavior in type type-C eclogites from the North American Cordillera and the Dominican Republic, and 2.) igneous geochemistry of pillow lavas from the California Coast Range Ophiolite and blocks in the Franciscan Complex. Presently, Marty is examining ophiolitic rocks exposed in a coastal outlier of the western Klamath terrane in southwestern Oregon. For his Masters Thesis Marty studied the structural evolution and metamorphic isograds of the the Monarch Canyon Area, Death Valley , Calfornia--an area he still enjoys visiting on field trips.

RECENT PUBLICATIONS

Giaramita, M.J. and Day, Howard, W., 1990. Error propagation in calculations of structural formulas. American Mineralogist, 75, 170-182.

Giaramita, M.J. and Day, Howard, W., 1991. Buffering in staurolite-aluminum silicate-biotite-garnet-chlorite assemblages. Journal of Metamorphic Geology, 9, 363-378.

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Giaramita, M.J. and Sorensen, S.S.,1994. Primary fluids in low-temperature eclogites: evidence from two subduction complexes (Dominican Republic and California U.S.A.). Contributions to Mineralogy and Petrology, 117, 279-292.

Giaramita, M.J., MacPherson, G.J., and Phipps, S.P., 1998, Petrologically diverse basalts from a fossil oceanic forearc in California : the Llanada and Black Mountain remnants of the Coast Range ophiolite. Geological Society of America Bulletin, 110, 553-571.

Giaramita, M.J., 1998, The Sierra Nevada Batholith as exposed in the Yosemite Valley area and western foothills of the Sierra Nevada , in Garry Hayes, ed. The Living Geology of the Sierra Nevada, Great Valley and Coast Ranges of California, Guidebook for the Fall Meeting of the National Association of Geology Teachers, p. 6-12.

Harper, G.D., Giaramita, M.J. and Kosanke, Stefan, 2002, Field Guide to the Josephine and Coast Range Ophiolites, Oregon and California , p. 1-22,. n, Moore, George, ed., "Field Guide to Geologic Processes in Cascadia". Oregon Department of Geology and Mineral Industries Special Paper 36.

Giaramita, M.J. and Harper, G.D., 2006, Geochemistry of ophiolitic rocks associated with the western part of the Elk outlier of the Western Klamath terrane, southwestern Oregon , in, Snoke, A.W. and Barnes, C.D., Geological Studies in the Klamath Mountain Province, California and Oregon : a volume in honor of William P. Irwin, Geological Society of America Special Paper 410, p. 153 – 176.

MacPherson, G.J., Giaramita, M.J., and Phipps, S.P., 2006, Tectonic implications of diverse igneous blocks in Franciscan melange, northern California and southwestern Oregon , American Mineralogist; v. 91, p. 1509 – 1520.

Harper, Gregory D., Kosanke, Stefan, Giaramita, M.J., Saleeby, J.B., and Heizler, M., 2000, Tectonostratigraphy and geochemistry of the Coast Range Ophiolite at Snowcamp Mountain , SW Oregon : Implications for the exotic vs. native origin of the Coast Range Ophiolite. Geological Society of America Abstracts with Programs, v. 32 p. a-17.

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Giaramita, M.J., and Harper, G.D., 2002, Lithologies, field relations, and petrotectonic affinities of a probable outlier of the Josephine Ophiolite, Elk River Area, SW Oregon, *Geological Society of America Abstracts with Programs*

Giaramita, M.J., and Harper, G.D., 2004, Geochemical and lithologic evidence of possible Rattlesnake Creek-like basement associated with a coastal outlier of the Josephine Ophiolite, SW Oregon , Geological Society of America Abstracts with Programs.

Dr. Horacio Ferriz, PG, CEG

EDUCATION

1980-84 Philosophy Doctor - Dept. of Applied Earth Sciences, Stanford University.
Emphasis on hydrogeology and engineering geology.

1978-80 Master in Science - Dept. of Applied Earth Sciences, Stanford University.
Emphasis on remote sensing of the environment and resource exploration.

1972-76 Engineer in Geology - School of Engineering, Mexico's National University.
Emphasis on engineering geology and hydrogeology

PROFESSIONAL EXPERIENCE

1999- Associate Professor - California State University, Stanislaus
Full time instructor of Applied Geology and Hydrogeology

1998- Principal - HF Geologic Engineering, Waterford, California

1993-98 Senior Engineering Geologist - GeoLogic Associates, Modesto, California.
Supervisor of geologic mapping, fault investigations, geophysical surveys, groundwater investigations, and environmental impact reports for new landfill developments. Analytical and numerical geotechnical models, seismic analysis, slope stability and dynamic deformation analysis, vadose zone hydrology, and groundwater flow models.

1992-93 Senior Geologist - CERES Environmental, Santa Fe Springs, California.
Supervisor of environmental site assessments, groundwater modeling, remediation of soil contamination, and geotechnical site assessments.

1985-92 Professor of Geology, Whittier College, California.
Instructor of Environmental Geology (including Hydrogeology) and Field Geology.

PROFESSIONAL LICENSES

Certified Engineering Geologist No. 2018 (1996), California
Professional Geologist No. 5757 (1993), California
Registered Geologic Engineer No. 477675 (1976), Mexico
Registered Environmental Assessor No. 98/94 (1994), Baja California, Mexico

RECENT PUBLICATIONS

2003 Ferriz, H., Alternative sources of water supply for the city of Guadalajara, Mexico: Geological Society of America Abstracts with Programs, Vol. 35, No. 4.

2002 Ferriz, H., Geology of the Cowhole Mountains, Mojave Desert, California: in Reynolds, R.E. (ed.), Between the Basins _ Exploring the Western Mojave and Southern Basin and Range Province, California State University, Desert Studies Consortium (Dept. of Biological Science, CSU Fullerton, Fullerton, CA 92384), p. 76.

2002 Ferriz, H., Bizuneh, G., Development and management of water resources: in Proceedings of Ethioforum 2002, January 16-20, (Addis Ababa, Ethiopia), p. 182-209.

2001 Ferriz, H., Anderson, R., (eds.), Engineering Geology Practice in Northern California: Association of Engineering Geologists Special Publication 12 and California Division of Mines and Geology Bulletin 210.

2001 Ferriz, H., Groundwater resources of Northern California - An overview: in Ferriz, H., Anderson, R., (eds.), Engineering Geology Practice in Northern California: Association of Engineering Geologists Special Publication 12 and California Division of Mines and Geology Bulletin 210, p.19-48.

2001 Ferriz, H., The basics of liquefaction analysis: in Ferriz, H., Anderson, R., (eds.), Engineering Geology Practice in Northern California: Association of Engineering Geologists Special Publication 12 and California Division of Mines and Geology Bulletin 210, 575-578.

2001 Ferriz, H., Hydrogeologic studies for landfill sites in fractured bedrock terrains: Proceedings of the Fractured Rock 2001 conference, Toronto, Canada, March 26 to 28, 2001, p. 125-132.

Dr. Julia T. Sankey

EDUCATION

Ph.D. 1998. Department of Geology and Geophysics, Louisiana State University, Baton Rouge, Louisiana.
M.S. 1991. Quaternary Studies. Northern Arizona University, Flagstaff, Arizona.
1988. Geology courses and field camp. University of Arizona, Tucson.
B.S. 1987. Department of Biology. Albertson College of Idaho, Caldwell, Idaho

EMPLOYMENT HISTORY

Assistant Professor – 2003 to present. California State University, Stanislaus, Turlock, CA.
Visiting Assistant Professor – 2002 to 2003. Vassar College, Poughkeepsie, NY.
Haslem Post-Doctoral Fellow/Assistant Professor (non-tenure track) - 1999 to 2002. South Dakota School of Mines & Technology, Rapid City, SD.
Fulbright Post-Doctoral Fellowship - 1999. University of Alberta and Tyrrell Museum of Paleontology, Canada.
Instructor - 1997 (summer), 1998 (fall). Dept of Geology and Geophysics, Louisiana State University, Baton Rouge, LA

HONORARY POSITIONS

Research Associate – 2005 to present. Univ. California Museum of Paleontology, Berkeley
Research Associate – 2000 to present. Royal Tyrrell Museum of Paleontology, Alberta
Research Associate – 1998 to present. Louisiana State Univ. Museum of Natural Science

HONORS AND AWARDS

Fulbright Postdoctoral Research Fellowship, Alberta, Canada. 1999.
Outstanding Graduate Student Award. LSU Museum of Natural Science. 1998

RECENT PUBLICATIONS

Sankey, J.T. and S. Baszio, Editors. *The Unique Role of Vertebrate Microfossil Assemblages in Paleoecology and Paleobiogeography*. Edited volume (18 chapters): University Press in June, 2006.

Nydam, R.L., J.G. Eaton, and J.T. Sankey. In Press (2006). New taxa and revisions of polyglyphanodontine lizards (Sqaumata: Scincomorpha) from the upper Cretaceous of North America. *Journal of Paleontology* (28 pp, 6 figs, 1 app).
Sankey, J.T., D.B. Brinkman, M. Guenther, and P.J. Currie. 2002. Small theropod and bird teeth from the Judith River Group (late Campanian), Alberta. *Journal of Paleontology* 76(4):751-763.

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Sankey, J.T. 2001. Late Campanian southern dinosaurs, Aguja Formation, Big Bend, Texas. *Journal of Paleontology* 75(1):208-215.

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Schiebout, J.A., S. Ting, and J.T. Sankey. 1997. Microvertebrate concentrations in pedogenic nodule conglomerates: recognizing the rocks and recovering and interpreting the fossils. *Palaeontologia Electronica*. 1(2):54 pp. http://palaeo-electronica.org/1998_2/toc.htm

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Dr. Robert D. Rogers

EDUCATION

2003 Ph.D. The University of Texas at Austin
1989 M.S. Colorado State University
1986 B.S. Appalachian State University

RECENT PUBLICATIONS

R. Rogers, P. Mann, P. Emmet, and M. Venable, 2007, Colon fold-thrust belt of Honduras: Evidence for late Cretaceous collision between the continental Chortis block in P. Mann (ed) GSA Special Paper 428: Geologic and Tectonic Development of the Caribbean Plate in Northern Central America, Geological Society of America Special Paper 428, p. 129-150.

R. Rogers and P. Mann, 2007, Transtensional deformation of the western Caribbean-North America plate boundary zone in P. Mann (ed) Geologic and Tectonic Development of the Caribbean Plate in Northern Central America, Geological Society of America Special Paper 428, p. 37-64.

R. Rogers, P. Mann, and P. Emmet, 2007, Tectonic terranes of the Chortis block based on integration of regional aeromagnetic and geologic data in P. Mann (ed) Geologic and Tectonic Development of the Caribbean Plate in Northern Central America, Geological Society of America Special Paper 428, p. 65-88.

R. Rogers, P. Mann, R. Scott, and L. Patino, 2007, Cretaceous intra-arc rifting, sedimentation, and basin inversion in east-central Honduras in P. Mann (ed) GSA Special Paper 428: Geologic and Tectonic Development of the Caribbean Plate in Northern Central America, Geological Society of America Special Paper 428, p. 89-128.

Jordan B., Sigurdsson H., Carey S., **Rogers, R**., and Ehrenborg J., 2006, Geochemical correlation of Caribbean Sea tephra layers with ignimbrites, in Central America .in Neogene-Quaternary Continental Margin Volcanism: A Perspective from Mexico edited by Claus Siebe, José Luis Macías, and Gerardo J. Aguirre-Díaz, Geologic Society of America Special Paper 402, p. 175-208.

C. Demets, G. Mattioli, P. Jansma, **R. Rogers**, C. Tenorios, and H. Turner, 2007, Present motion and deformation of the Caribbean plate: Constraints from new GPS geodetic measurements from Honduras and Nicaragua, in P. Mann (ed) GSA Special Paper 428: Geologic and Tectonic Development of the Caribbean Plate in Northern Central America, p. 21-37.

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Mann, P., **Rogers, R.**, and Gahagan, L., 2006, Chapter 8, Overview of Plate tectonic history and its unsolved tectonic problem, in J. Buncdschud (ed) Central America : Geology, Resources, and Natural Hazards, Balkema Publishers, The Netherlands. p. 205 – 241.

Rogers, R. D., 2003, Jurassic-Recent tectonic and stratigraphic history of the Chortis block of Honduras and Nicaragua (northern Central America), The University of Texas at Austin, Ph. D. dissertation, 289 p.

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Rogers, R.D. and E.A. O'Conner. 1993. Mapa Geológico de Honduras: Hoja de Tegucigalpa (segunda edición): Instituto Geográfico Nacional, Tegucigalpa, Honduras. 1:50,000

Rogers, R.D. 1995. Mapa Geológico de Honduras: Hoja de Valle de Jamistran: Instituto Geográfico Nacional, Tegucigalpa, Honduras. 1:50,000

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