Geology & Geography Department

PROGRAM REVIEW

Program Review Committee:
Dudley Gardner, Ph.D., Program Review Chair
Charlie Love
Craig Thompson
Kathy Mattinson

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Section I: Overview

I A. Purpose of the Program

The mission of the geology and geography programs is to:

- introduce students to how they can understand the human world, past and present including: social groups; the evolution of human societies; the evolution of humans; the way people think and respond to various stimuli; human culture and human thought; social institutions; such as the economy, government, the educational system, and the family; how societies respond to social deviance; and the relationship between humans and their physical environment.
- introduce students to the scientific methods and research used to analyze the human condition. Introduce the principles of effective research, such that they can discern legitimate research from incomplete research studies.
- provide the basic tools and capabilities needed for individuals to perform proficiently within their chosen field in the social sciences.
- examine cultures in and out of the United States, the nature of political and economic organizations, social structures, and how humans function through examining the biological, cognitive, and intra-personal aspects of behavior.
- Introduce students to the current trends and practices in the disciplines.

GEOLOGY

Geology is the study of the Earth, its substances, shapes, processes and history. Geology analyzes how planets form and how the physical features evolve. Geology is:

- ✓ the study of the formation of rocks and minerals, and how the surface is altered by natural processes including erosional and tectonic forces;
- ✓ the study of the structure of planets, or of a specific physical area and the materials of which it is made, the structure of those materials, and the processes acting upon them;
- ✓ the study of the organisms and how they have changed over time.

Careers in geology can be interesting and rewarding, and can be centered in a variety of settings including:

- natural resource companies (oil, gas, and mining)
- environmental consulting companies
- local and state government agencies
- academic institutions
- research institutions
- museums
- industrial applications

Geology work can involve planning and evaluating excavations, construction sites, environmental remediation projects, and natural disaster preparedness; locating natural

resources; or studying natural resources. Specific kinds of geology work can involve any of the following:

- field work including geotechnical testing
- laboratory work
- teaching
- writing report
- generating calculations
- mapping
- computer work
- economic development of resources

Students interested in a career in geology should consider these generalized education requirements:

- Pre-college students should take college preparatory courses in earth science, biology, chemistry, physics and math, as well as courses in writing, environmental science, computers, geography, and mapping.
- Entry-level employment typically requires a bachelor's degree.
- High-level employment such as supervisory positions, research assignments, or teaching positions at the university level typically requires advanced degrees in a geology specialty area such as paleontology, mineralogy, hydrology or volcanology.

(Sources: geology.com; wikipedia.com)

As noted Geology is the study of the origin, history and structure of the earth. One the leading institutions our students transfer to is the University of Wyoming. The University of Wyoming undergraduate program puts forth the following mission statement for its department:

U.W.'s undergraduate offerings encompass virtually every aspect of the science, with emphasis on current theory, methods and applications. The primary mission of our B.S. Geology Program is to provide a broad educational experience that prepares men and women for careers in earth science-related fields. We expect that our graduate should:

- Have the basic knowledge and skills demanded for entry-level competence in typical careers in earth science-related fields.
- Be able to apply their knowledge to specific situations or problems.
- Cultivate the skills and ethics that will allow them effectively to serve their employers and to enhance their own career development.
- Develop increased capacity for independent learning, critical thinking, and problem solving.
- Develop basic numerical skills and computer literacy as part of an undergraduate program designed to deliver a current and relevant knowledge of their discipline.
- Communicate effectively and professionally through oral, written, and graphical means and to participate effectively in the work environment, both in individual and team-related activities.

- Have the broad general education needed to appreciate the role of Earth Sciences in the societal context and appreciate the importance of ethics in the practice of the profession.

The University of Wyoming's geology curriculum emphasizes:

- Geology
- Geology & Earth Sciences
- Geology & Water Resources
- Geophysics

GEOGRAPHY

Geography is basically the study of space and place. Geography studies where things are located on the surface of the earth, why they are located where they are, how places differ from one another, and how people interact with the natural environment. Within geography humankind is integral to the discipline because geological processes often take into consideration how humans interact by looking at how people utilize and settle on the landscape. Geography has two main branches – human and physical, however there are other sub-disciplines including environmental geography, cartography and geomatics. Geography is:

- ✓ the science concerned with the biosphere – the life layer of Earth's lands, waters, and atmosphere;
- ✓ a descriptive science that covers the distribution of plant and animal life on the earth's surface;
- ✓ the study of the required resources for the functioning of the biosphere and the effects of humans on the land water and air.

Careers in geography can be very diverse. An obvious career with geography can be an instructor from the high school to graduate level. However an education in geography can open the door to many careers of which "geography" or "geographer" are not necessarily in the title. Below are some fields and specific careers in a variety of settings for those with a geography degree:

FIELD	CAREER
General Geography	Economic Geographer – location expert, market researcher, traffic manager (shipper)/route Delivery Manager Real Estate Agent/Broker/Appraiser
Environmental Geography	Environmental Manager Forestry Technician Park Ranger Hazardous-Waste Planner
Geographic Education	Elementary/Secondary School Teacher College Professor Overseas Teacher
Geographic Technology	Cartographer/Computer Mapper

	Geographic Information System Specialist Remote-Sensing Analyst
Human and Cultural	Peace Corps Volunteer Community Developer Map Librarian
Physical Geography	Weather Forecaster Outdoor Guide Coastal Zone Manager Soil Conservationist/Agricultural Extension Agent Hydrologist
Regional Geography	Area Specialist International Business Representative Travel Agent
Urban and Regional Planning	Urban and Community Planner Transportation Planner Health Services Planner Source: Association of American Geographers

While a Bachelors Degree in Geography is often considered the minimum requirement for most of the careers mentioned above, students should intern wherever possible in any areas of interests to gain valuable hands on experience and get a foot in the door; also, an internship gives additional weight to a candidate's resume.

(Sources: American Association of Geographers; wikipedia.com)

As noted geography is the study of the natural environment and human interaction with their environment. One the leading institutions our students transfer to is the University of Wyoming. The University of Wyoming undergraduate program puts forth the following mission statement for its department:

> The Department of Geography at the University of Wyoming intends to further its prominence as a regional institution with emphases in both human and physical geography, as well as a specific focus within the geographical information sciences. We are committed to teaching and research, at both the undergraduate and graduate level, and to service to the community, the state, and the region.
>
> To this end, U.W. has a curriculum that emphasizes:
> - The promotion of a strong element of life-long learning that prepares our students for active careers as geographers and planners throughout the region and nation as well as internationally;
> - The development of a strong understanding of the spatial and temporal processes and patterns within social and environmental systems;
> - The shaping of a strong commitment to understand the relationships between humans and the environment and of the many ways in which geographical training can improve that relationship;

- The instilling in our students of the ability to think critically about the complexity of the cultural and environmental issues that face the contemporary world at the local, national, and international scales;
- The heavy involvement of students and faculty in joint research activity and publication;
- The concentration of important elements of spatial analysis and application of spatial technology to problem solving;
- The instillation of a work ethic and commitment to excellence that will allow our students and faculty to contribute in a meaningful way to the development of plans and programs that will improve the quality of http://uwadmnweb.uwyo.edu/geog/default.asp

The University of Wyoming's geography curriculum emphasis centers on:

- Physical Geography
- Geographic Information Science
- Natural Resource Management/Recreation
- Human Geography
- Planning
- Elementary Education Majors at UW are required to take ASTR/GEOL 1070 (4) The Earth: Physical Environment some College use Physical Geography as a substitute—but the issue is there is call for Geology and Geography

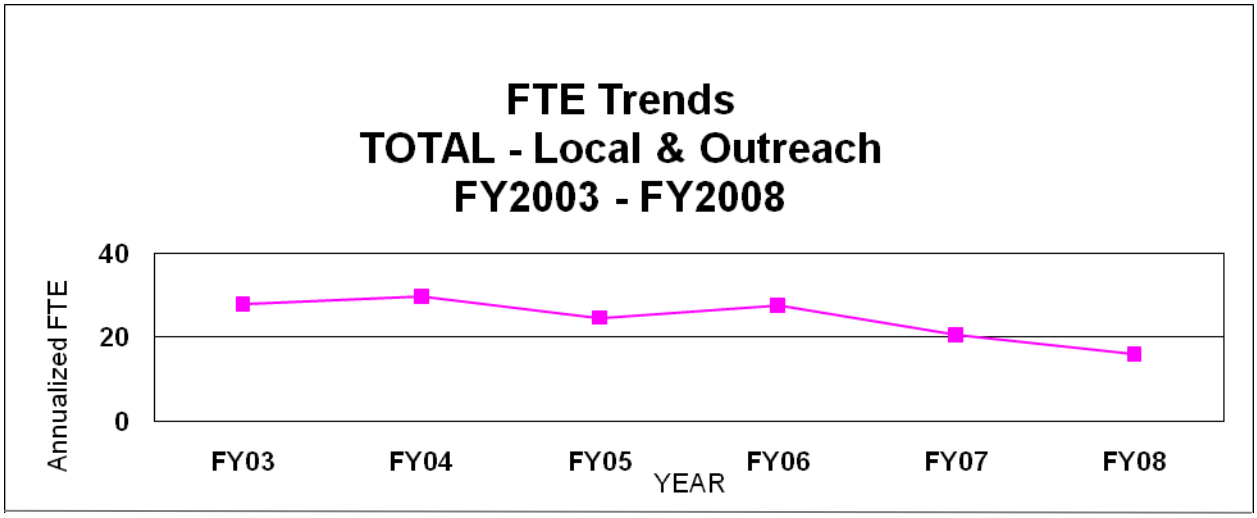
I B. Primary Program Goals

Program-Level Goals ***What will students learn in this program?***	**WWCC College Wide Goals** ***Which goals will be strengthened?***	**Assessment for Student Goals** ***How will the skill be measured?***
Develop an awareness and understanding of the formation of land forms, particularly the significance of plate tectonics	See issues from multiple perspectives	• Exams • Class discussions • Essay papers
Develop an understanding of the impact the environment has on individual lives	See issues from multiple perspectives	• Exams • Class discussions • Essay papers
Demonstrate clear expression in written and oral forms in a style consistent with generally accepted terms and concepts used in the discipline, including effectively articulate a point of view to people of diverse backgrounds	Communicate competently	• Exams • Class discussions • Essay papers
Gain access to information through critical reading of literature in the field of study	Retrieve information	• Exams • Class discussions • Essay papers
Identify how people function on an individual basis and within groups	Communication competently Retrieve information	• Exams • Class discussions • Essay papers
Apply and demonstrate knowledge of ethical behavior within the discipline	See issues from multiple perspectives Develop life skills	• Exams • Class discussions • Essay papers
Apply and demonstrate knowledge of the scientific method	Solve problems	• Exams • Class discussions • Essay papers

Section II: Fact Finding

II A. Enrollment and Audience

This is one of the smaller programs on campus but has potential for growth. Please note the FTE trends set out below. Although the data indicates a downward trend, we feel with proper marketing and development this program has the potential to grow (see Appendix B and C for Specific Statistics).



II B. Facilities and Equipment

This program requires allocated space, especially geology. The space assigned exclusively to the department is room 1220, which is a geology laboratory/lecture room that has doubled as an archeology and geography classroom. We need at least one more lab for geology.

II C. Printed Materials and Website

The geology web pages have recently been revised recently. The URL is http://www.wwcc.cc.wy.us/xgeology/ Significant changes were made to three of the four pages as follows:

1) main Geology page – total revamp;
2) courses page (G&R was added to GEOL);
3) Added a faculty page.

No printed material is currently available.

II D. Learning Pathways

Course #	**Program Goal 1—** Develop an awareness and understanding of the formation of land forms, particularly the significance of plate tectonics	**Program Goal 2**— Develop an understanding of the impact the environment has on individual lives	**Program Goal 3**— Demonstrate clear expression in written and oral forms in a style consistent with generally accepted terms and concepts used in the discipline, including effectively articulate a point of view to people of diverse backgrounds	**Program Goal 4**— Gain access to information through critical reading of literature in the field of study	**Program Goal 5**— Identify how people function on an individual basis and within groups	**Program Goal 6**— Apply and demonstrate knowledge of ethical behavior within the discipline	**Program Goal 7**— Apply and demonstrate knowledge of the scientific method	GSS 1— **Communicate Competently**	GSS 1— **Retrieve Information**	GSS 1— **See Issues from Multiple Perspectives**	GSS 1— **Solve Problems**	GSS 1— **Develop Life Skills**
G&R 1000	X	X	X	X	X	X	X	X	X	X	X	X
G&R 1050	X	X	X	X	X	X	X	X	X	X	X	X
G&R 1070	X	X	X	X	X	X	X	X	X	X	X	X
GEOL 1100	X	X	X	X	X	X	X	X	X	X	X	X
GEOL 1200	X	X	X	X	X	X	X	X	X	X	X	X
GEOL 2080	X	X	X	X	X	X	X	X	X	X	X	X
GEOL 2150	X	X	X	X	X	X	X	X	X	X	X	X

II E. Professional Development

The program's fulltime instructors (A. Dudley Gardner, Ph.D., Charles Love, and Craig Thompson) are all very active in professional development. They publish in refereed journals, attend conferences, and actively engage in research. The efforts they put into research are directly applied in the classroom. A brief sampling of their recent accomplishments follows:

A. Dudley Gardner, Ph.D., Professor History/Political Science

- Division Chair of Social Science/Fine Arts Division, since1994
- Book: *Red Desert: A History of A Place* Annie Proulx *et. al*. **(**Austin: University of Texas Press, December 2008). Wrote six chapters and two inserts in the book.
- Articles and Chapters in Books:
  - "The Chinese Cemetery at Levuka Fiji***," Domodomo : the Scholarly Journal of the Fiji Museum*** in press**.** (Junior author Laura Pasacreta).
  - "Cores and Peripheries: Chinese Communities in Southwestern Wyoming, 1869 to 1922***," Wyoming Archaeologist***, Volume 49 (1), Spring 2005: 19-39. Published in 2007.
  - "The Chinese of Wyoming***," the Greenwood Encyclopedia of American Regional Cultures*** (Westport, CT: Greenwood Press, in press).
  - "Ethnicity" in ***"The Plains Region," the Greenwood Encyclopedia of American Regional Cultures*** (Westport, CT: Greenwood Press, November 2004).

  "The Chinese in Wyoming: Life in the Core and Peripheral Communities, " in Lipeng Zhu and Rose Estep. ***Ethnic Oasis: The Chinese in the Black Hills: South Dakota History*** (Pierre: South Dakota Historical Society Press, 2004).
- Professional Papers Presented:
  - 2010; "Microfloral Remains and its Implications for the Chinese Diaspora in the South Pacific, 1860-1930," 43rd Annual Conference on Historical and Underwater Archaeology, Amelia Island, Jacksonville Florida (Gardner, Hutchinson, Pasacreta, and Gardner).
  - 2009; "The South Seas Chinese: Chinese Microfloral Remains in the Southern Pacific, 1840-1930," Annual New Zealand Archaeological Association Meeting, Wellington New Zealand (June 2009), (Gardner, Pasacreta, and Lammers).
  - 2009; "High Elevation Cultivation at Middle Latitudes in Northwest Colorado from ca. 500 -1500 BP, 74th Annual Society of American Archaeology Meeting, Atlanta Georgia (Gardner, Gardner, and Elliott, Pasacreta).
  - 2009; "The South Seas Chinese: Chinese Material Culture in the Southern Pacific, 1840-1930," Presented at the Society for Historical Archaeology 42nd Conference on Historical and Underwater Archaeology, Toronto, Ontario, Canada, (Gardner, Pasacreta, Hutchinson, and Westling).
- Field Schools and Project Directed:
  - 2000-Present Worked in Fiji, New Zealand, Easter Island, and Tahiti conducting archaeology field work
  - 2000-Present Field direct of recordation of historic sites in Polynessia.
  - 1999-Present Taught archeology field schools at three Fremont Sites in Northwestern Colorado
  - 1994-Present Director of Evanston Chinatown Excavations
  - 1994-Present Excavation and Interpretation of the Evanston Chinatown.
  - 1991-Present Fort Bridger Trading Post, Mormon Wall, and Commissary Restoration

- 1990-Present Director of Fort Bridger Excavations
- 1981-Present Director of Historical Studies, Western Wyoming Community College. Responsible for evaluation and recordation of historic sites, architectural evaluations, historic surveys, excavation of historic sites, oral interviews, and historic evaluations in the South Pacific, Colorado, Utah, and Wyoming. Also responsible for managing and administering both large and small scale historic project budgets and staffing.

Charles Love, Professor of Geology/Anthropology

- Co-Principle Investigator of ongoing 25 year long Current Wind River Glacier Research Project
- Principle Investigator of ongoing 12 year long research of Past Wind River Glaciations; involving in excess of five students; won several research grants
- Lead semi-annual student geology field trips to Yellowstone and Grand Teton National Parks
- Lead international 9-day student geology field trips to Hawaii in 2004; 20 students
- Lead international 9-day student geology field trips to Mexico in 2006; 16 students
- Lead international 14-day student geology field trips to Peru in 2008; 11 students
- Acquired eight 6' x 10" polished slabs from Italy, Africa, Brazil, and Finland, illustrating continental geology; now on display in hallways of WWCC
- Keynote speaker to Society of Mining Engineers, October, 2008

Craig Thompson, Professor of Earth Science/Engineering

- Continuing Education: Mitarbeiter: Department of Aquatic Ecology, 2009 - Present
- Eidgenössische Technische Hochschule Zürich, EAWAG, Swiss Federal Institute of Aquatic Science and Technology, Überlandstraße 133, Postfach 611, 8600 Dübendorf Switzerland
- Presented of Research Paper on Stream Ecological Responses to Alpine Glacier Recession, National Science Foundation, EPSCoR Annual Meeting, C. Thompson, M. Freestone, J. Moore, Western Wyoming Community College, Rock Springs, Wyoming , C. T. Robinson, Department of Aquatic Ecology, EAWAG/ETH, Dübendorf, Switzerland, 2009
- Keynote Speaker to Green River Women's Club, March 8, 2010
- Keynote Speaker to the Society of Mining Engineers, March 11, 2010
- Published Research Publication: Robinson, C.T., Thompson, C.D., Freestone, M., 2010. Colonization of newly exposed streams following rapid glacial recession. Global Change Biology (submitted).
- Contributing Author: Thompson, C.D. et al, WATER IN THE RED in RED DESERT – HISTORY OF A PLACE Annie Proulx, editor, 2008, University of Texas Press
- Received "Faculty of the Year" award, presented by the Wyoming Association of Community College Trustees for the 2009-2010 academic year.
- Received grant support in 2009 from the UWYO-National Science Foundation EPSCoR (Experimental Program to Stimulate Competitive Research) program and the Wyoming NASA Space Grant Consortium to do research in Switzerland on stream ecology near retreating glaciers; Professor Thompson was the only Wyoming two-year college instructor to receive the latter grant.

II F. Previous Recommendations

This is a baseline program review. No previous program review is available.

Section III: Focus on the Future

III A. Assessment Reporting: Program Goals

Program Goals

1. Develop an awareness and understanding of the formation of land forms, particularly the significance of plate tectonics
2. Develop an understanding of the impact the environment has on individual lives
3. Demonstrate clear expression in written and oral forms in a style consistent with generally accepted terms and concepts used in the discipline, including effectively articulate a point of view to people of diverse backgrounds
4. Gain access to information through critical reading of literature in the field of study
5. Identify how people function on an individual basis and within groups
6. Apply and demonstrate knowledge of ethical behavior within the discipline
7. Apply and demonstrate knowledge of the scientific method

Application of Assessment Measures

Direct – The attached rubric (see Appendix A) follows the University of Wyoming's rubric for "Natural Sciences (S, SB, SP, and SE) Assessment. For the time being, that is until the program makes changes to the rubric, faculty feels it more than adequate to use the University of Wyoming Assessment Goals, the Western Wyoming Community College Goals, and the Rubric in Appendix A as the primary measures for direct assessment.

Indirect – No surveys or focus groups have been used to assess the geology or geography programs.

Internal – Students in the geology and geography programs are assessed primarily with exams created and scored by the instructor of and interactions during class discussions between students and the instructor of record; papers are assessed using the agreed upon rubric discussed above.

External – No external testing or surveying has been conducted or applied to the geology or geography programs.

Use of Results

1) In the near future, the faculty in the Geology and Geography Department needs to adapt this rubric to their program. This may mean modifying the entire rubric, but the rubric will still need to follow the basic University of Wyoming model.

2) Consideration will be given to conducting a survey among the students in the future.

III B. Strengths, Limitations & Opportunities

The **strength** of this program lays in the excellent faculty members. The greatest **limitation** is that no specific faculty member is assigned exclusively to direct a comprehensive program that will steer future growth.

The greatest **opportunity** of this program is the WWCC students who continue to show an interest in the areas of geology and geography, coupled with their enthusiasm to learn. Because of the students, this is a program that has potential for growth. There may be a limit to that growth, but geography and geology are of interest to a select group of interested public in the service area. In addition, and according to the University of Wyoming, an integrated program that offers Human Geography, Physical Geography, Cultural Geography, Introduction to Geology, Historical Geology, and Geomorphology could aid in many students' overall academic development (http://uwadmnweb.uwyo.edu/registrar/bulletin/2asgeol.html).

And finally, since geology meets a general education requirement as a laboratory science, there is potential to expand its role in the core curriculum. Geography also provides several course offerings that can benefit Education, Anthropology, and History majors. In addition, these courses also have a potential for meeting the University of Wyoming Core requirements for Global Studies.

Additional Note: The Geography Degree Program was deactivated in fall of 2007.

> **Explanation of deactivation of the A.A. Degree with emphasis in Geography**, provided by Kathy Mattinson, Curriculum Committee Assistant.
>
> Consideration for deactivation of the degree program originated when doing a routine annual review of the various programs listed in the catalog. At that time it was noted that several of the courses listed in the A.A. Degree with emphasis in Geography program were listed in wrong semester for the current semester rotation. Also, the addition of a computer course was required to meet the new computer course general education requirement. In addition, the Registrar Kay Leum reported that no student had ever graduated from WWCC with an A.A. Degree with emphasis in Geography.
>
> After some discussion between Craig Thompson and Vice President for Student Learning Ken Fitschen, it was determined that the A.A. Degree with emphasis in Geography would be proposed for deactivation rather than updated due to lack of enrollment and graduates, and removed from the catalog. The A.A. Degree with emphasis in Geography was approved for deactivation and deletion from the catalog at the October 8, 2007 meeting.

III C. Action Plan

This is a much needed Program Review and for now the conclusions are modest but we would like to put forward a plan for the future; it is to be a faculty-driven plan. This action plan also evaluates where we are and what we can do. Much work is needed. To that end we are putting forward the following plan.

First Year 2009-10			
Task or Action	Purpose	Measure of Success	Who is Responsible?
Consider offering geology courses to the public that are educational in nature and would attract students into the classroom. A prime example of this would be Geology of Sweetwater County.	To meet the needs and desires of interested community members	Increased offerings in the schedule	Fulltime Faculty
Develop and implement one or two additional courses that meet transfer requirements for transfer students.	To meet the needs of students	Increased offerings in the schedule	Fulltime Faculty Registrar
Tasks Dependent on Funding	Data to Justify Need, and Consequence of Not Funding		Who is Responsible?
none			

Second Year 2010-11			
Task or Action	Purpose	Measure of Success	Who is Responsible?
Refine and develop a rubric that both the geology and geography instructors feel meets their needs	To develop a sound assessment strategy for the program.	Use of an updated rubric	Fulltime Faculty
Develop a focus group to bounce ideas off and to help develop the program	To develop a plan for the future of the program which provides a dynamic vision the future of the geology and geography program	A viable focus group in place	Vice President of Student Learning Division Chair

	at WWCC		
Tasks Dependent on Funding	Data to Justify Need, and Consequence of Not Funding		Who is Responsible?
Look at funding and space requirements	Enrollment statistics Space availability Funding availability		Fulltime Faculty Division Chair

Third Year 2011-12			
Task or Action	Purpose	Measure of Success	Who is Responsible?
Develop and implement one or two additional courses that meet transfer requirements for transfer students.	To meet the needs of students	Increased offerings in the schedule	Fulltime Faculty Registrar
Consider a long-term commitment to developing the program via internet or distance education.	To ensure success of the program, we may need to offer other courses in the program online as well (Anthropology is already being offered on line)		Director of Distance Learning Vice President for Student Learning Adjunct Faculty
Tasks Dependent on Funding	Data to Justify Need, and Consequence of Not Funding		Who is Responsible?
none			

The above plan is modest—and can evolve—but it needs to be developed primarily by the faculty in the program area, which really is as much more a matter of time as it is of commitment.

Appendix A University of Wyoming Natural Sciences Assessment Rubric

1 CRITERIA	2 ADVANCED	3 PROFICIENT	4 BASIC	5 UNSATISFACTORY
Students understand the basic scientific concepts in the discipline. Assessment method (assignment/task assessed)	Demonstrates a thorough understanding of the generalizations, concepts, and facts specific to the situation and provides new comprehension of some aspect of this information.	Displays a complete and accurate understanding of the generalizations, concepts, and facts specific to the situation.	Displays an incomplete understanding of the generalizations, concepts, and facts specific to the situation and has some notable misconceptions.	Demonstrates severe misconceptions about the generalizations, concepts, and facts specific to the situation.
	# of Students_____	# of Students_____	# of Students_____	# of Students_____
Students recognize scope and limitations of the scientific approach. Assessment method (assignment/task assessed)	Provides a complete and accurate explanation of the outcome of the activity or experiment and does so in terms of the relevant facts, concepts, or principles. Provides understanding of the nature of the phenomenon studied or the facts, concepts, and principles used to explain it.	Provides a complete explanation of the outcome of the activity or experiment with no important errors. Presents the explanation in terms of the relevant facts, concepts, or principles.	Provides a general explanation of the outcome of the activity or experiment but omits one or two important aspects, or may not effectively relate the outcome to the facts, concepts, or principles being used to generate the prediction.	Provides an inaccurate, highly flawed explanation of how the outcome relates to the original explanation.
	# of Students_____	# of Students_____	# of Students_____	# of Students_____
Students comprehend relationships between the discipline and contemporary society. Assessment method (assignment/task assessed)	Comprehends multiple relationships between the discipline and contemporary society,	Demonstrates comprehension of some relationships between the discipline and contemporary society.	Demonstrates comprehension of few relationships between the discipline and contemporary society.	Fails to understand the relationship between the discipline and contemporary society.
	# of Students_____	# of Students_____	# of Students_____	# of Students_____

Appendix B Total Enrollment Statistics 2003-2008

Western Wyoming Community College
Program Data Period: FY2003 - FY2008
Department: GEOLOGY & GEOGRAPHY

TOTAL ENROLLMENT - All Locations

	SEMESTER SU02	FA02	SP03	02-03' ANNUAL	SEMESTER SU03	FA03	SP04	03-04' ANNUAL	PERCENT CHANGE	SEMESTER SU04	FA04	SP05	04-05' ANNUAL	PERCENT CHANGE
Duplicated Headcount	0	74	104	89.00	12	82	103	98.50	10.67%	0	82	82	82.00	-16.75%
FTE	0.00	24.00	31.83	27.92	2	25.84	31.83	29.84	6.88%	0	24.24	25.24	24.74	-17.08%
% of Total College FTE	0.00%	1.30%	1.81%	1.48%	1.04%	1.34%	1.72%	1.51%	1.86%	0.00%	1.22%	1.23%	1.17%	-22.14%
Number of Classes:														
Day Classes	0	3	5	4.00	0	4	4	4.00	0.00%	0	4	4	4.00	0.00%
Evening Classes	0	1	0	0.50	1	1	1	1.50	200.00%	0	0	1	0.50	-66.67%
Asc/nronous(inc. CV/OC)	0	1	1	1.00	0	1	3	2.00	100.00%	0	1	2	1.50	0.00%
Total	0	5	6	5.50	1	6	8	7.50	36.36%	0	5	7	6.00	-20.00%
ROC/GRE Classes	0	4	4	4.00	1	4	5	5.00	25.00%	0	3	5	4.00	-20.00%
HS Concurrent Classes	0	0	1	0.50	0	1	1	1.00	100.00%	0	0	1	0.50	-50.00%
Outreach	0	1	1	1.00	0	1	2	1.50	50.00%	0	2	1	1.50	0.00%
Avg. Class Size	0.00	14.80	17.33	16.07	12.00	13.67	12.88	19.27	19.94%	0.00	16.40	11.71	14.06	-27.05%
Classes Under 10	0	2	1	1.50	0	2	3	2.50	66.67%	0	0	4	2.00	-20.00%
(directed study excluded)														
Staffing:														
Hours Taught by FT Faculty	0	11	14	12.50	2	11	14	13.50	8.00%	0	11	14	12.50	-7.41%
Hours Taught by PT Faculty	0	8	8	8.00	0	12	16	14.00	75.00%	0	7	12	9.50	-32.14%
Total Credit Hrs. Taught	0	19	22	20.50	2	23	30	27.50	34.15%	0	18	26	22.00	-20.00%
Student/Faculty/Ratio	0.00	18.95	21.70	20.32	15.00	16.85	15.92	16.27	-19.93%	0.00	20.20	14.56	17.38	6.80%
(FTE/(Cr. Hrs./15))														
FTE By FT Faculty	0	12.33	15.84	14.09	2	11.17	17.84	15.51	10.08%	0	15.58	16.25	15.92	2.64%
% of Program FTE	0.00%	51.38%	49.76%	50.46%	100.00%	43.23%	56.05%	51.97%	3.00%	0.00%	64.27%	64.38%	64.33%	23.78%
FTE By PT Faculty	0	11.67	15.99	13.83	0	14.67	13.99	14.33	3.62%	0	8.66	8.99	8.83	-38.42%
% of Program FTE	0.00%	48.63%	50.24%	49.54%	0.00%	56.77%	43.95%	48.03%	-3.05%	0.00%	35.73%	35.62%	35.67%	-25.73%

Appendix B continued

Page Two

Western Wyoming Community College
Program Data Period: FY2003 - FY2008
Department: GEOLOGY & GEOGRAPHY

TOTAL ENROLLMENT - All Locations

	SEMESTER SU05	FA05	SP06	05-06' ANNUAL	PERCENT CHANGE	SEMESTER SU06	FA06	SP07	06-07' ANNUAL	PERCENT CHANGE	SEMESTER SU07	FA07	SP08	07-08' ANNUAL	PERCENT CHANGE
Duplicated Headcount	0	78	99	88.50	7.93%	0	82	56	69.00	-22.03%	0	42	64	53.00	-23.19%
FTE	0	23.58	31.75	27.67	11.82%	0	23.92	17.34	20.63	-25.43%	0	11.5	20.66	16.08	-22.06%
% of Total College FTE	0.00%	1.11%	1.56%	1.25%	6.57%	0.00%	1.16%	0.88%	0.96%	-23.03%	0.00%	0.59%	1.09%	0.79%	-18.05%
Number of Classes:															
Day Classes	0	4	5	4.50	12.50%	0	5	4	4.50	0.00%	0	4	4	4.00	-11.11%
Evening Classes	0	0	0	0.00	-100.00%	0	0	0	0.00	0.00%	0	0	0	0.00	0.00%
Asycnronous(inc. CV/OC)	0	1	1	1.00	-33.33%	0	0	1	0.50	-50.00%	0	0	1	0.50	0.00%
Total	0	5	6	5.50	-8.33%	0	5	5	5.00	-9.09%	0	4	5	4.50	-10.00%
ROC/GRE Classes	0	3	3	3.00	-25.00%	0	3	3	3.00	0.00%	0	3	3	3.00	0.00%
HS Concurrent Classes	0	0	2	1.00	100.00%	0	1	1	1.00	0.00%	0	0	1	0.50	-50.00%
Outreach	0	2	1	1.50	0.00%	0	1	1	1.00	-33.33%	0	1	1	1.00	0.00%
Avg. Class Size	0.00	15.60	16.50	16.05	14.18%	0.00	16.40	11.20	13.80	-14.02%	0.00	10.50	12.80	11.65	-15.58%
Classes Under 10 (directed study excluded)	0	1	0	0.50	-75.00%	0	2	2	2.00	300.00%	0	2	2	2.00	0.00%
Staffing:															
Hours Taught by FT Faculty	0	11	11	11.00	-12.00%	0	11	11	11.00	0.00%	0	11	11	11.00	0.00%
Hours Taught by PT Faculty	0	7	12	9.50	0.00%	0	7	8	7.50	-21.05%	0	3	8	5.50	-26.67%
Total Credit Hrs. Taught	0	18	23	20.50	-6.82%	0	18	19	18.50	-9.76%	0	14	19	16.50	-10.81%
Student/Faculty Ratio (FTE/(Cr. Hrs./15))	0.00	19.65	20.71	20.18	16.10%	0.00	19.93	13.69	16.81	-16.69%	0.00	12.32	16.31	14.32	-14.84%
FTE By FT Faculty	0	12.33	15.75	14.04	-11.78%	0	15.67	7.67	11.67	-16.88%	0	6.5	10.33	8.42	-27.89%
% of Program FTE	0.00%	52.29%	49.61%	50.75%	-21.11%	0.00%	65.51%	44.23%	56.57%	11.46%	0.00%	56.52%	50.00%	52.33%	-7.49%
FTE By PT Faculty	0	11.25	16	13.63	54.39%	0	8.25	9.67	8.96	-34.24%	0	5	10.33	7.67	-14.45%
% of Program FTE	0.00%	47.71%	50.39%	49.25%	38.07%	0.00%	34.49%	55.77%	43.43%	-11.81%	0.00%	43.48%	50.00%	47.67%	9.75%

Appendix C Specific Enrollments by Course/Instructor/FTE

GEOG, GEOL
AY03- AY08

Term	Section Name	Short Title	Full Name	Location	Min Cred	Start Time	Cnt	Course FTE
02/FA	G&R_1050_01	INTRO TO NATURAL RESOURCES	Craig Thompson	ROC	3	08:30AM	8	2.00
02/FA	GEOL_1100_01	PHYSICAL GEOLOGY	Charles Love	ROC	4	09:00AM	24	8.00
02/FA	GEOL_2150_01	GEOMORPHOLOGY	Charles Love	ROC	4	01:00PM	7	2.33
02/FA	GEOL_1100_G1	PHYSICAL GEOLOGY	Richard Leigh	GRE	4	05:30PM	11	3.67
02/FA	**GEOL_1100_KC**	**PHYSICAL GEOLOGY**	**Vincent Santucci**	**KEM**	**4**	**06:00PM**	**6**	**2.00**
02/FA	**GEOL_1100_OC**	**PHYSICAL GEOLOGY**	**Vincent Santucci**	**KEM**	**4**	**06:00PM**	**18**	**6.00**
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02/FA					**19**		**74**	**24.00**
03/SP	GEOL_1200_01	HISTORICAL GEOLOGY	Charles Love	ROC	4	08:00AM	5	1.67
03/SP	**GEOL_1100_S1**	**PHYSICAL GEOLOGY**	**Mark Nethercott**	**AFT**	**4**	**08:25AM**	**22**	7.33
03/SP	G&R_1050_01	INTRO TO NATURAL RESOURCES	Craig Thompson	ROC	3	08:30AM	16	4.00
03/SP	GEOL_1100_01	PHYSICAL GEOLOGY	Charles Love	ROC	4	09:00AM	17	5.67
03/SP	G&R_2490_HP	STD: HONORS ENERGY & ENVIRON	Stephen Brumbach	ROC	3	02:00PM	18	4.50
03/SP	**GEOL_1200_KC**	**HISTORICAL GEOLOGY**	**Vincent Santucci**	**KEM**	**4**	**06:00PM**	**7**	**2.33**
03/SP	**GEOL_1200_OC**	**HISTORICAL GEOLOGY**	**Vincent Santucci**	**KEM**		**06:00PM**	**19**	**6.33**
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03/SP					**22**		**104**	**31.83**
03/SU	G&R_1070_Q1	WAYS OF THE RIVER	Craig Thompson	ROC	2	06:00PM	12	2.00
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03/SU					**2**		**12**	**2.00**
03/FA	G&R_1050_HP	HONORS INTRO TO NTRL RSRCES	Craig Thompson	ROC	3	08:30AM	18	4.50
03/FA	GEOL_1100_01	PHYSICAL GEOLOGY	Charles Love	ROC	4	09:00AM	15	5.00
03/FA	GEOL_2150_01	GEOMORPHOLOGY	Charles Love	ROC	4	01:00PM	5	1.67
03/FA	**GEOL_1100_S1**	**PHYSICAL GEOLOGY**	**Mark Nethercott**	**AFT**	**4**	**02:10PM**	**17**	**5.67**
03/FA	**GEOL_1100_OC**	**PHYSICAL GEOLOGY**	**Arvid Aase**	**KEM**		**06:00PM**	**21**	**7.00**
03/FA	**GEOL_1100_KC**	**PHYSICAL GEOLOGY**	**Arvid Aase**	**KEM**	**4**	**06:00PM**	**1**	**0.33**
03/FA	GEOL_1100_G1	PHYSICAL GEOLOGY	Richard Leigh	GRE	4	06:30PM	5	1.67
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03/FA					**23**		**82**	**25.84**

Appendix C continued

GEOG, GEOL
AY03- AY08

04/SP	GEOL_1200_01	HISTORICAL GEOLOGY	Charles Love	ROC	4	08:00AM	2	0.67
04/SP	**GEOL_1100_S1**	**PHYSICAL GEOLOGY**	**Mark Nethercott**	**AFT**	**4**	**08:25AM**	**14**	**4.67**
04/SP	G&R_1050_HP	HONORS INTRO TO NAT RESOURCES	Craig Thompson	ROC	3	08:30AM	13	3.25
04/SP	GEOL_1100_01	PHYSICAL GEOLOGY	Charles Love	ROC	4	09:00AM	29	9.67
04/SP	**GEOL_1100_OC**	**PHYSICAL GEOLOGY**	**Arvid Aase**	**KEM**		**06:00PM**	**13**	**4.33**
04/SP	**GEOL_1200_OC**	**HISTORICAL GEOLOGY**	**Arvid Aase**	**KEM**		**06:00PM**	**4**	**1.33**
04/SP	**GEOL_1100_KC**	**PHYSICAL GEOLOGY**	**Arvid Aase**	**KEM**	**4**	**06:00PM**	**1**	**0.33**
04/SP	**GEOL_1200_KC**	**HISTORICAL GEOLOGY**	**Arvid Aase**	**KEM**	**4**	**06:00PM**	**1**	**0.33**
04/SP	GEOL_1100_G1	PHYSICAL GEOLOGY	Richard Leigh	GRE	4	06:30PM	9	3.00
04/SP	G&R_1050_CV	INTRO TO NATURAL RESOURCES	Craig Thompson	ROC	3	07:00PM	7	1.75
04/SP	G&R_1050_OC	INTRO TO NATURAL RESOURCES	Craig Thompson	ROC		07:00PM	10	2.50
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04/SP					**30**		**103**	**31.83**
04/FA	G&R_1050_01	INTRO TO NATURAL RESOURCES	Craig Thompson	ROC	3	08:30AM	17	4.25
04/FA	GEOL_1100_01	PHYSICAL GEOLOGY	Charles Love	ROC	4	09:00AM	24	8.00
04/FA	GEOL_2150_01	GEOMORPHOLOGY	Charles Love	ROC	4	01:00PM	10	3.33
04/FA	**G&R_1000_V1**	**INTRODUCTION TO GEOGRAPHY**	**Christina Kirschner**	**EVA**	**3**	**01:00PM**	**20**	**5.00**
04/FA	**GEOL_1100_OC**	**PHYSICAL GEOLOGY**	**Arvid Aase**	**KEM**		**06:00PM**	**10**	**3.33**
04/FA	**GEOL_1100_KC**	**PHYSICAL GEOLOGY**	**Arvid Aase**	**KEM**	**4**	**06:00PM**	**1**	**0.33**
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04/FA					**18**		**82**	**24.24**
05/SP	GEOL_1200_01	HISTORICAL GEOLOGY	Charles Love	ROC	4	08:00AM	5	1.67
05/SP	**GEOL_1100_S1**	**PHYSICAL GEOLOGY**	**Mark Nethercott**	**AFT**	**4**	**08:20AM**	**16**	**5.33**
05/SP	G&R_1050_HP	HONORS: INT TO NTRL RESOURCES	Craig Thompson	ROC	3	08:30AM	20	5.00
05/SP	GEOL_1100_01	PHYSICAL GEOLOGY	Charles Love	ROC	4	09:00AM	25	8.33
05/SP	**GEOL_1100_KC**	**PHYSICAL GEOLOGY**	**Arvid Aase**	**KEM**	**4**	**06:00PM**	**1**	**0.33**
05/SP	**GEOL_1100_OC**	**PHYSICAL GEOLOGY**	**Arvid Aase**	**KEM**		**06:00PM**	**4**	**1.33**
05/SP	GEOL_1100_G1	PHYSICAL GEOLOGY	Richard Leigh	GRE	4	06:30PM	6	2.00
05/SP	G&R_1050_CV	INTRO TO NATURAL RESOURCES	Craig Thompson	ROC	3	07:00PM	3	0.75
05/SP	G&R_1050_OC	INTRO TO NATURAL RESOURCES	Craig Thompson	ROC		07:00PM	2	0.50
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05/SP					**26**		**82**	**25.24**

Appendix C continued

GEOG, GEOL
AY03- AY08

05/FA	G&R_1050_01	INTRO TO NATURAL RESOURCES	Craig Thompson	ROC		3	08:30AM	16		4.00
05/FA	GEOL_1100_01	PHYSICAL GEOLOGY	Charles Love	ROC		4	09:00AM	22		7.33
05/FA	GEOL_2150_01	GEOMORPHOLOGY	Charles Love	ROC		4	01:00PM	3		1.00
05/FA	**G&R_1000_V1**	**INTRODUCTION TO GEOGRAPHY**	**Christina Kirschner**	**EVA**		**3**	**01:00PM**	**13**		**3.25**
05/FA	**GEOL_1100_KC**	**PHYSICAL GEOLOGY**	**Arvid Aase**	**KEM**		**4**	**06:00PM**	**0**		**0.00**
05/FA	**GEOL_1100_OC**	**PHYSICAL GEOLOGY**	**Arvid Aase**	**KEM**			**06:00PM**	**24**		**8.00**
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05/FA						**18**		**78**		**23.58**
06/SP	GEOL_1200_01	HISTORICAL GEOLOGY	Charles Love	ROC		4	08:00AM	10		3.33
06/SP	G&R_1050_HP	HONORS INTRO TO NTL RESOURCES	Craig Thompson	ROC		3	08:30AM	15		3.75
06/SP	GEOL_1100_01	PHYSICAL GEOLOGY	Charles Love	ROC		4	09:00AM	26		8.67
06/SP	**GEOL_1100_S1**	**PHYSICAL GEOLOGY**	**Mark Nethercott**	**AFT**		**4**	**12:35PM**	**15**		**5.00**
06/SP	**GEOL_1100_S2**	**PHYSICAL GEOLOGY**	**Mark Nethercott**	**AFT**		**4**	**02:10PM**	**17**		**5.67**
06/SP	**GEOL_1100_KC**	**PHYSICAL GEOLOGY**	**Arvid Aase**	**KEM**		**4**	**06:00PM**	**4**		**1.33**
06/SP	**GEOL_1100_OC**	**PHYSICAL GEOLOGY**	**Arvid Aase**	**KEM**			**06:00PM**	**12**		**4.00**
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06/SP						**23**		**99**		**31.75**
06/FA	G&R_1050_01	INTRO TO NATURAL RESOURCES	Craig Thompson	ROC		3	08:30AM	16		4.00
06/FA	GEOL_1100_01	PHYSICAL GEOLOGY	Charles Love	ROC		4	09:00AM	29		9.67
06/FA	GEOL_2150_01	GEOMORPHOLOGY	Charles Love	ROC		4	01:00PM	6		2.00
06/FA	**G&R_1000_V1**	**INTRODUCTION TO GEOGRAPHY**	**Christina Kirschner**	**EVA**		**3**	**01:00PM**	**25**		**6.25**
06/FA	**GEOL_1100_S1**	**PHYSICAL GEOLOGY**	**Mark Nethercott**	**AFT**		**4**	**02:13PM**	**6**		**2.00**
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06/FA						**18**		**82**		**23.92**
07/SP	GEOL_1200_01	HISTORICAL GEOLOGY	Charles Love	ROC		4	08:00AM	3		1.00
07/SP	G&R_1050_HP	HONORS INTRO TO NATRL RESRCS	Craig Thompson	ROC		3	08:30AM	16		4.00
07/SP	GEOL_1100_01	PHYSICAL GEOLOGY	Charles Love	ROC		4	09:00AM	8		2.67
07/SP	**GEOL_1100_S1**	**PHYSICAL GEOLOGY**	**Mark Nethercott**	**AFT**		**4**	**08:47AM**	**11**		**3.67**
07/SP	**GEOL_1100_WC**	**PHYSICAL GEOLOGY**	**Lesley Urasky**	**RAW**		**4**	**07:00PM**	**2**		**0.67**
07/SP	**GEOL_1100_OC**	**PHYSICAL GEOLOGY**	**Lesley Urasky**	**RAW**			**07:00PM**	**16**		**5.33**

Appendix C continued

GEOG, GEOL
AY03- AY08

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07/SP						19			56		17.34
07/FA	G&R_1050_01	INTRO TO NATURAL RESOURCES	Craig Thompson	ROC		3	08:30AM	10		2.50	
07/FA	GEOL_1100_01	PHYSICAL GEOLOGY	Charles Love	ROC		4	09:00AM	9		3.00	
07/FA	GEOL_2150_01	GEOMORPHOLOGY	Charles Love	ROC		4	01:00PM	3		1.00	
07/FA	**G&R_1000_V1**	**INTRODUCTION TO GEOGRAPHY**	**Christina Kirschner**	**EVA**		**3**	**01:30PM**	**20**		**5.00**	
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07/FA						14			42		11.50
08/SP	GEOL_1200_01	HISTORICAL GEOLOGY	Charles Love	ROC		4	08:00AM	3		1.00	
08/SP	G&R_1050_HP	HONOR INT TO NATURL RESOURCES	Craig Thompson	ROC		3	08:30AM	8		2.00	
08/SP	GEOL_1100_01	PHYSICAL GEOLOGY	Charles Love	ROC		4	09:00AM	22		7.33	
08/SP	**GEOL_1100_SS1**	**PHYSICAL GEOLOGY**	**Mark Nethercott**	**AFT**		**4**	**12:45PM**	**19**		**6.33**	
08/SP	**GEOL_1100_OC**	**PHYSICAL GEOLOGY**	**Lesley Urasky**	**RAW**			**07:00PM**	**10**		**3.33**	
08/SP	**GEOL_1100_WC**	**PHYSICAL GEOLOGY**	**Lesley Urasky**	**RAW**		**4**	**07:00PM**	**2**		**0.67**	
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08/SP						19			64		20.66