REQUEST FOR APPROVAL TO USE W-DESIGNATION

LSC # 172
Action approved 2/29/96

COVER SHEET: Request for Approval to Use W-Designation

TYPE I. PROFESSOR COMMITMENT
(x) Professor S. A. Hovan Phone x7662
(x) Writing Workshop? (If not at IUP, where? when?) _____
(x) Proposal for one W-course (see instructions below)
(x) Agree to forward syllabi for subsequently offered W-courses?

TYPE II. DEPARTMENT COURSE
( ) Department Contact Person _____ Phone _____

( ) Course Number/Title _____
( ) Statement concerning departmental responsibility
( ) Proposal for this W-course (see instructions below)

TYPE III. SPECIFIC COURSE AND SPECIFIC PROFESSOR(S)
( ) Professor(s) _____ Phone _____
( ) Course Number/Title _____
( ) Proposal for this W-course (see instructions below)

SIGNATURES:

Professor(s) Stan A. Hovan

Department Chairperson [signature]

College Dean [signature]

Director of Liberal Studies Marlene Richardson 2-29-96

COMPONENTS OF A PROPOSAL FOR A WRITING-INTENSIVE COURSE:

I. "Writing Summary"--one or two pages explaining how writing is used in the course. First, explain any distinctive characteristics of the content or students which would help the Liberal Studies Committee understand your summary. Second, list and explain the types of writing activities; be especially careful to explain (1) what each writing activity is intended to accomplish as well as the (2) amount of writing, (3) frequency and number of assignments, and (4) whether there are opportunities for revision. If the activity is to be graded, indicate (5) evaluation standards and (6) percentage contribution to the student's final grade.

II. Copy of the course syllabus.

III. Two or three samples of assignment sheets, instructions, or criteria concerning writing that are given to students. Limit: 4 pages. (Single copies of longer items, if essential to the proposal, may be submitted to be passed among LSC members and returned to you.)

Please number all pages. Provide one copy to Liberal Studies Committee.

Before you submit: Have you double-checked your proposal against "The Liberal Studies Committee's Most Frequently Asked Questions"?

Writing Summary - GS362 "Plate Tectonics"

GS362 (Plate Tectonics) is proposed for identification as a writing intensive course offered by the Geoscience Department. Plate Tectonics is taught every spring but is not listed as a Liberal Studies Elective. GS362 is a required course to obtain a BS in Geology however, students enrolled in Geoscience, Earth and Space Science Education, and General Science education programs often elect this course as one of their geology electives. Prerequisites for this course include at least 20 hours of geology courses, thus most of the students in the class are juniors or seniors.

There are THREE basic types of writing assignments in this course:

1. WRITING TO EVALUATE INSTRUCTION

Two main exams are given that consist of a combination of short answers and essay questions covering the material covered in both the laboratory and lecture portions of this class. The exams questions are designed in such a manner as to test conceptual understanding of the material presented and it's significance to the overall Earth system. The "short answer" questions constitute about one-third of each exam grade and the remaining portion consists of several short essays, each approximately 2-3 paragraphs in length. Although exam grades are based mainly on content, clear and well organized answers to the questions are expected.

2. WRITING TO STIMULATE THOUGHT AND TO SUMMARIZE SCIENTIFIC MATERIAL CONCISELY

Students are asked to read several different scientific articles relating plate tectonic concepts to geologic or exogenic Earth processes. After reading these articles, they may be asked to summarize the material in a clear and concise manner in the form of a scientific abstract. Specific guidelines with an appropriate example is provided to each student and each assignment is to be reviewed and discussed with at least two classmates before final submission. These abstracts are returned to the students with the instructor's comments but are not formally graded although credit is given for each assignment. These assignments collectively count toward 5% of the course grade.

In addition, students are asked to research a particular topic in greater detail and summarize their findings in both oral and written form. This research project is broken into three separate parts which collectively comprise 35% of their course grade. The first part of this assignment called "Fiscal Responsibility" asks students to justify their research study to a general audience (presumably the taxpaying audience). The second part involves a brief outline of the entire research paper designed to provide an initial framework for the paper. Soon after the outline is turned in and well before the final deadline for the project, I meet with each student individually to discuss their progress on the project, guide them in appropriate directions, and answer any concerns they may have about the research. The third portion of the project is the written and oral report. Students are asked to summarize their research in the form of a scientific paper consisting of 5-8 pages of text and present this to the class during a "scientific meeting" that mimics the style of oral presentation at professional geologic society meetings. Before final submission of their research paper, each student is given the opportunity to revise their work based on reviews provided by two of their class peers and myself. The final version is graded based on content and adherence to scientific style.

3. WRITING TO ANALYZE CRITICALLY

Students are also asked to review classmate's writing in an exercise designed to teach the importance of peer reviewing and to enhance their own writing ability by critically

evaluating others. Students are required to review two other research papers and respond to aspects concerning content, clarity, relevance, etc. Each review is returned to me before being passed along to the manuscript's author (anonymously if the reviewer chooses). Credit is given for each review done properly but no formal grade is given. Together, these reviews comprise 10% of the class grade.

Summary of Writing Assignments for GS362 - Plate Tectonics

Assignment	# of Assignments	Total # of Pages	Graded (yes/no)	Revisions (yes/no)	% of Final Grade
Exams	2	8-10	Y	N	50
Abstract Writing	2	2	N	Y	5
Research Project a. fiscal resp. b. outline	1 1	3 1-2	N N	N N	35 (total)
c. project rpt.	1	5-8	Y	Y	
Peer Reviews	2	4-6	N	N	10

GS 362- Plate Tectonics - Spring '96

Lecture: MW 1:00 - 2:00 / Lab: Mon 2:15-5:15
Room 133 Weyandt Hall
Text: Tectonics authored by Moores and Twiss

Dr. Steve Hovan
office: 117 Walsh
phone: 357-7662 (w)
email: hovan@grove.iup.edu

Office Hours: Tues (10-12), Wed (2-3), Thur (10-12), and by appointment.

Attendance & Participation

You should attend class whenever possible and notify me when you can't. In addition to attendance, active participation in class discussions through questions and expression of ideas formulated while reading assigned text material is strongly encouraged. If you have outstanding attendance and participation during the semester, I will add 2 percentage points to your final total grade (eg. 88% --> 90%, 78% --> 80%, etc.).

Exams:

There will be two exams for this class - a midterm and a final. Both exams will consist of essay questions covering material from both the lecture and laboratory portions of the class. A makeup exam will be given only when verifiable emergency circumstances exist. Exams are designed in such a manner as to test your conceptual understanding of the material presented and it's significance to the overall Earth system.

Research paper and presentation:

A term project consisting of 5-8 typed pages will be collected and evaluated as part of your final grade. At some point during the term, we will take a trip to Penn State so you can research your topics more fully using their library/reference resources (they're pretty good). You will have a chance to revise your paper after peer and professor reviews. In addition to the written portion, you will provide an enlightening but brief oral presentation (12-15 minutes) of your assignment. This assignment is designed for you to research a particular aspect of plate tectonics in greater depth than presented through class lectures and textbook reading assignments using journal articles and technical publications . The written and oral presentations are intended to help you learn how to summarize results in a clear and concise manner.

Shorter Written Assignments:

Several short written assignments will be assigned throughout the term. These assignments are designed to help you learn to present scientific information in a well written and concise manner and will be evaluated for writing style and content and before being returned to you. Although these will not be graded formally (eg. A, B, C, etc), credit will be given for completed assignments.

Grades:

Your minimum total grade for this class will be determined by averaging the midterm exam, final exam and final project grades.

Midterm Exam	20%
Final Exam	30%
Research Project	35%
Shorter written assignment	15%

I'll meet with each of you individually near the midterm to discuss your status in the class. Of course, please drop by anytime throughout the semester if you have any questions about your grade or any other concern regarding the class.

LECTURE SCHEDULE*

Date	Topic	Suggested Reading
Jan. 17	Introduction to course and topics	Chapter 1
22	Historical perspectives	pgs. 247-260
24	Sources of data	Chapter 2 (pgs. 11-26)
29	Origin of the Earth, Moon, Sun	
31	Earth's Interior	
Feb 5	The Earth's Crust (continents)	Chapter 3 (pgs. 27-48)
7	The Earth's Crust (oceans)	
12	Tectonic Features of the Earth	
14	Driving Mechanisms	Chapter 4 (70-85)
19	Trip to PSU Lbirary - Research Methods	
21	Divergent Boundaries & Rifting	Chapter 5
26	Transform Faults and Fracture Zones	Chapter 6
28	Exam #1	
March 4	----------	
6	SPRING BREAK - ENJOY YOURSELF	
8	----------	
11	Discussion of Exam Questions	
13	Convergent Margins	Chapter 7
18	Global Tectonic History: A brief walk through time	Chapter 12
20	Paleozoic history: Appalachians	
25	Mesozoic and Cenozoic tectonics of North America	
27	Himalayan and Alpine Models	Chapter 11 (pgs. 218-234)
April 1	Tectonics and Global Change	
3	Biological evolution and tectonics	
8	Class Presentations	
10	Crisis and catastrophe	
15	FINAL EXAM	

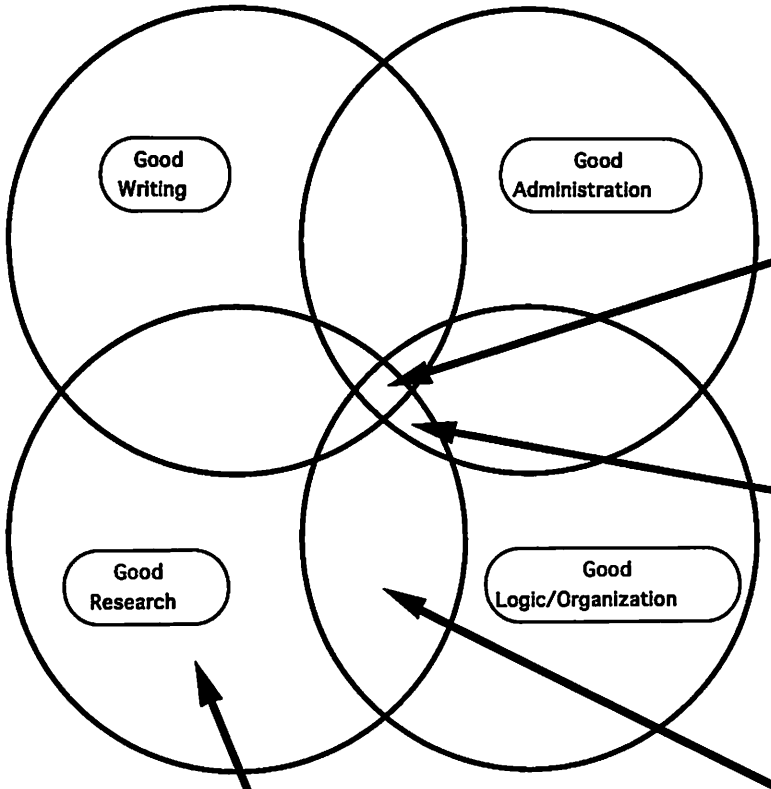
LAB SCHEDULE

Date	Topic
Jan. 22	Geography and Introduction to "real" computers (ie. Macintosh)
29	Radioisotope Dating
Feb 5	Paleomagnetism
12	Earthquakes
19	Trip to PSU Lbirary - Research Methods
26	Seafloor spreading
March 4	SPRING BREAK
11	Individual meetings to discuss exam/research project
18	Global Tectonic History (lecture continued)
25	History of the Appalachians (part 1)
April 1	History of the Appalachians (part 2)
8	Class Presentations

* NOTE: In addition to above scheduled lectures, we will meet outside of class (either weekends or evenings) to makeup 6 hours of lecture that will be missed at the end of the term.

Elements of an Outstanding Written Assignment

(modified after S. Jackson, IUP)



A
all elements are clearly present

B
three of the four elements are present, weaker on the fourth

C
only two of the core elements are clearly present

D
only merit is it fulfills one core element of the assignment

Good Writing:
- grammar is correct
- spelling 100% correct
- clear, direct and interesting
- uses proper citation and bibiliographic style
- proper sectioning of paper - a place for everything and everything in its place
- abstract clear and concise
- introduction is interesting and concise
- conclusion answers questions posed in introduction

Good Administration:
- turned in on time
- typed or wordprocessed
- assignment is in specified format (page and word limits respected, line spacing, margins)
- cover sheet, stapled
- proof-read by yourself and draft checked by writing center
- ideas have been dicussed with instructor

Good Logic:
- responds to the assignment, the whole assignment and nothing but the assignment
- appropriate title
- clearly states thesis or scientific objective
- appropriate background provided in the introduction
- paragraphs support thesis in a logical progression
- evidence is offered for each point

Good Research:
- uses a variety of verifiable sources
- proper use of statistics when appropriate
- avoids non-scientific citation such as Time, Newsweek, newspaper articles etc.
- is appropriately up-to-date
- shows original synthesis of sources (not mearly a "cut and paste" job)

Abstract Writing Assignment #1

Due Date:
Monday, Feb. 12 - due at the beginning of class in the morning

Assignment:
Read the article entitled "Continental Drift and the Fossil Record" and submit a scientific abstract summarizing the article. Follow the guidelines provided below to help you along this process. After you have written, re-written, and re-rewritten you abstract, I want you to submit it to two other members of the class (get to know them now) and ask them to read and edit it for you... then re-write it again to submit to the me. Along with your final version, please submit both copies of your original abstract containing the editorial comments and signed by your peer reviewers.

Writing an Abstract:
When you write a scientific abstract, you want to:

1. Be as **concise** as possible about your scientific findings.
2. Be as **specific** as possible about your scientific findings.

These goals may seem mutually contradictory but repeated editing and re-writing can usually lead you to achieve them. The following steps can help you through this process.

Step One: Briefly list each of your major findings and the main line of evidence supporting it. It is better to focus on just one or two important points than include many points whose value is fuzzy. Make sure you are clear on what evidence goes with which points, *before* you actually start writing.

Step Two: Write one sentence stating the problem attacked by your research project, including physical location of the field area (if any) and stratigraphic information (depth and/or age) about your rock or sediment unit (if you have one). This sentence should tell the reader why you started the research project. (Ex. "Scientist have long argued that the Gobi Desert was much drier during the last glacial maximum and that this additional dust may have caused further cooling due to increased scattering and reflection of incoming solar radiation by the atmosphere.")

Step Three: Write one or two sentences summarizing your research methods (eg. mapping, fossil identification, microscopic or chemical analysis, etc.). This section should tell the reader exactly what you did. Avoid vague phrases like "many rocks were analyzed" in favor of phrases like "We examined magnetic susceptibility values from three separate locations on the Loess Plateau in order to decipher the timing and evolution of aridification in the Gobi Desert region in Central China".

Step Four: Write one sentence summarizing each of your major conclusions along with supporting evidence. Make sure that the research methods you described in step threee are the ones whose results show up here! Again, avoid general overviews like "Extreme variability in the susceptibility patter were recorded". Instead, come out and say specifically that "Magnetic susceptibility in soil horizons formed during interglacial times was enhanced nearly 10 times the values recorded in loess layers deposited during glacials".

Step Five: Write one concluding sentence underlining the importance of your research results. NEVER end by saying that anything "will be dicussed" in your talk or manuscript -- that goes without saying. If possible, point out interesting larger implication of you work. (Ex. "This pattern suggests that increased dust deposition may be responsible for diluting susceptibility measurements during loess deposition and that glacial climates were significantly more arid than interglacials".)

GS 362- Plate Tectonics - Spring '96

Research Paper Assignment

Due Dates:

Monday, February 25 - "Fiscal Responsibility" assignment
Monday, March 11 - Outline of your paper (thorough but not necessarily final)
Friday, April 5 - Research Paper (no later than 5pm!)

The main body of your paper (excluding title page, abstract, references, etc.) should be about 5-8 pages of double spaced print. . And it should consist of the following sections:

Title - **(WHO)** Give your paper a clear title, and put your name, institution, and date on it.

Abstract - A brief summary that concisely states what's in your paper and why anyone should care.

Introduction - **(Why)** Expand upon the reasons why this paper is important. Give the reader some background material and emphasize the aspects that you plan to discuss in this manuscript.

Methods - **(HOW)** Discuss the particular methods used in the research or summarize the methods used by the person(s) whose data you interpreted or summarized in your thesis.

Results and Discussion of Results - **(What and WHO CARES)** State clearly the results of the research and how your paper addresses the main points raised in the introduction.

Summary/Conclusions - Just as the section heading says, summarize the main points and tell me what significant conclusions can be drawn from your paper.

References - Full and complete referencing is essential for good scientific manuscripts.

TOPICS

Alps _____
Aluetian Trench System _____
Easter Island Microplate _____
Galapagos Spreading Center _____
Himalayas _____
Juan de Fuca - Gorda Ridge _____
Mariana-Bonin Trench _____
Mississippi Embayment/New Madrid Fault Zone _____
NinetyEast Ridge/Indian Ocean tectonics _____
Overlapping Spreading Centers _____
Peru-Chile Trench _____
Red Sea Rift Zone _____
Tectonics of Venus _____

(ADDITIONAL ASSIGNMENT EXAMPLE)

GS 362 - Plate Tectonics
Spring, 1996
Dr. S. Hovan

Peer Reviewing a Manuscript

Reviewing manuscripts is an important contribution to the scientific community at large. As you will soon become aware, competent reviews by your peers can be a valuable tool. Not only will you assist your colleagues in conveying information from their life's work (or I this case, their semester's work), but also assist others in understanding the data and information contained in a manuscript, thus expediting the forward progress of science. These guidelines naturally reflect my personal views on what makes for an adequate scientific paper, but, perhaps much more importantly, they are taken from the wisdom of many others who spend their days and nights editing and reviewing journal articles for a living. These guidelines are brief and direct, but you should by no means consider them set in stone. Use them to help you and your colleagues construct better scientific articles.

I. Reviewing the Soundness of Content (Is there "good meat" in the manuscript?)

A sound manuscript explains the purpose of the work, how the results were obtained, what the results are, what they mean, and why the results are significant. The following is designed to guide you through the process of reviewing the soundness of content in a scientific manuscript. This is probably the single-most important aspect of the manuscript - if the science is not "sound", then the manuscript should be rejected in it's entirety.

Does the introduction lay the groundwork for the text that follows?

The introduction should give enough background so that the work described can be understood and evaluated, describing (among other things) the purpose and scope of the work, the reasons for the chosen approach and the method of investigation, and the principal results and conclusions. To further orient the reader, or to provide a rationale for the work, the introduction should also present a review of the pertinent literature, based on carefully selected references.

Is the approach or experimental design adequate?

The author has the right to choose the goal of the study, but a reviewer should look for possible flaws in the chosen approach. Judge whether the approach used is sufficient to reach

the intended goal, and whether the approach taken is adequately explained. Stratigraphy may need type sections, petrography may need chemical analyses, geomorphology may need terrain measurements and so on. Point out any oversights by the author

Are the materials and methods described?

To qualify as a scientific paper, a manuscript must explain what was studied and the procedures used -- not just the results. Judge whether the methods are reliable and adequate, citing other methods when appropriate. Especially consider whether a competent scientist could repeat and test the described work. Data for an age determination, for example, should include the precise locality of the samples, a brief description of its distinguishing features, its relation to other rock units, and pertinent facts about the analytical method. Familiar, published techniques can simply be cited, but where they differ from previous methods, the differences should be explained.

Are the results explained concisely and with regard for what is worth reporting?

Judge whether the results are given concisely, discriminating between those of primary and trivial interest. Some authors report undigested results, as if taken from the pages of a notebook, littered with unrelated facts or ideas. Point out any places where the author has failed to separate the wheat from the chaff. Repetitive results are best given as tables or graphs, or should be otherwise distilled. Results given as tables, maps, cross sections, well logs, photographs, and other kinds of graphs and diagrams should not duplicate each other and should not be repeated redundantly in the text, unless needed to reinforce a specific point in the logical development of the report. In experimental work, a given procedure may not always lead to the expected result. The reviewer, therefore, can properly ask whether any results were negative and whether different results might be obtained under different conditions.

Are the conclusions sound and relevant?

Conclusions are the points made in the author's "discussion", after the results have been described. Convincing conclusions show clearly what the results mean. Such conclusions discuss relations between the observed facts, interpret their significance, and give evidence for each inference. A review of the results is superfluous. The author should explain gaps and limits in the results, if any, and how the results support or contradict the finding of others. Speculation should be limited to reasonable, testable hypotheses. Some authors make too much from too little, fail to see a useful principle in clouds of detain, ignore obvious

alternative hypotheses, digress on irrelevant matters, or reach illogical conclusions from the available facts. The most significant conclusions should also be given in the abstract (and sometimes in the introduction).

II. Reviewing for Completeness of the Content (Is everything there and is it all in the right places?)

A scientific report should have an apt title, an informative abstract, pertinent references, proper credit for noteworthy contributions, and (to be most useful) suitable illustrations and tables. Failures in any of these areas are not usually significant enough to reject a manuscript outright, however, are often for a contingent acceptance based on major modification. In other words... it ain't going to get published until you fix it!

Does the title reflect the content of the report?

The title should reveal the subject and suggest the scope and objectives of the report. Specific terms (called key words by indexing services) make a title more complete and precise. Needless words ("Investigations on.... blah, blah, blah") are excess baggage. Some authors forget to include an identifying geographic name. A common fault in titles is the use of nouns as adjectives (eg. "Ocean Disposal Symposium"). Abbreviations, jargon, and unusual terms should not be used in titles. Cleverly worded titles are unsuitable for scientific papers but may be provocative for essays and other expressions of individual views. Titles in the form of a question or a statement can be a little too forceful and caution should be taken not to annoy the reader (eg. "Deuterium Isotopes: What good are they?").

Is the abstract informative?

An abstract tells readers whether they need to study the report that follows. Judge the abstract by reading it both before and after the body of the manuscript. It should be written in plain and simple terms, giving the essence of the report, but standing on its own. An informative abstract outline the purpose of the work, the methods used, the important results, and what the results mean (for a good example, refer back to the "abstract writing" exercise). Only information in the report should be given. Point out unneeded words and ideas. If abbreviations, symbols, or acronyms must be used for brevity or clarity, the author should define them. A reference is acceptable in an abstract only when it is part of the subject -- as in a report that modifies a published laboratory procedure. The full reference must then be given. The order of topics in an abstract must be logical but need not be the same as in the body of the report. Giving the conclusions first and then the background and supporting facts can be effective.

Are published references used adequately and properly?

Judge whether the references are both sufficient and necessary and whether they are accurately used. If relevant work has been missed, give the full references. Conversely, only significant, published work should be cited. References are superfluous if not directly related to the work described (although published work of historical interest may be pertinent for a "Review Article"). A report "in press" may be cited if it has been accepted for publication by a journal or if it has been approved for publication as a formal institutional report, but references should not cite "unpublished data" or "in preparation". Such information can be paraphrased in the text as oral or written communication. All cited information must be accurately reported, and the citation should be placed unambiguously in the text (that is, with the particular information described). You should also check the citations in the text against the list of references, noting any omissions or discrepancies in names, dates, or pagination.

Are the illustrations and tables used effectively and properly?

The question points to several potential problems: whether results shown in illustrations might be given more appropriately in tables, and conversely; whether too many or too few illustrations or tables are used; whether illustrations or tables are used redundantly to convey information given in the text; whether details in the text could be expressed more effectively and concisely in illustrations or tables; whether information in the illustrations and tables is consistent with interpretations given in the text; whether an illustration or a table shows what the author intends it to show, and whether the illustrations and tables are in proper form. Identifying such problems and suggesting appropriate solutions can be complex and difficult, but the correct displays of illustration and data tables can often make or break a manuscript.

Title of Manuscript _____

_____

Author(s) _____

Please address each topic listed. More detailed comments may be placed on additional sheets. Suggestions, minor corrections and comments may be made directly on the manuscript.

Introduction: Does it lay the groundwork for the text that follows? Is adeequate credit given to related studies?

Methods: Is the approach or experimental design adequate? Are the methodologies explained?

Results: Are the results explained consisely and accurately? Are they relevent?

Discussion and Conclusions: Are all the assumptions identified? Are the interpretations clear and substantiated? Are the conclusions valid?

Is the manner of presentation clear and coherent?

Is the abstract clear? Is any relevent information omitted? Any irrelevent information included?

It the title appropriate? Please suggest important keywords that were omitted.

Are illustrations clear and effective? Would additional illustrations help clarify text? Please be specific.

Which of the following course of actions would you recommend for this paper?

_____ Publish

_____ without change _____ with minor revision _____ with moderate revision

_____ Reject, because

_____ paper needs major revisions and resubmittal to review process

_____ content is not of great importance and is not worth of publication

Would you like your identity be known to the reviewer? _____ YES _____ NO

_____ _____

Your Signature (will be removed if you wish to remain anonymous) Date

Liberal Studies Office
352 Sutton Hall

Phone x 5715
E-mail DRCHRDSN

March 5, 1996

To: Steve Hovan, Geoscience Department

From: Darlene Richardson, Director

Subject: Type I Writing Approval

At its meeting on February 29, 1996, the Liberal Studies Committee approved your request to be designated as a Type I Writing Professor. This approval is based on your proposal for GS 362 Plate Tectonics. We have a few friendly suggestions/revisions on this syllabus: please clarify what you mean by "writing to evaluate instruction" and please revise "attend when you can" so that students understand what you mean by outstanding attendance.

A Type I writing approval means that you can teach any course you wish as writing-intensive as long as the spirit of and criteria for writing-intensive courses are incorporated in that course.

Thank you for submitting such a strong writing proposal and thank you for helping our students write well.

Copies: Frank Hall, chair, Geoscience Department
John Eck, dean, College of Natural Sciences and Mathematics