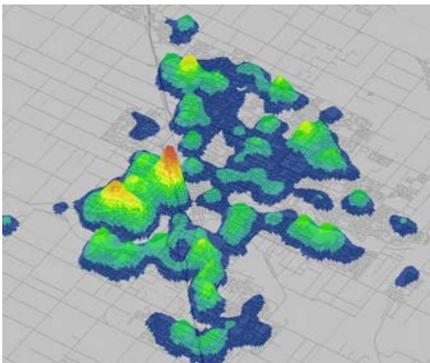




Geography Student Handbook



CSUS Geography, Fall 2005



Geography Student Handbook

contents

ONE

WELCOME TO GEOGRAPHY	Part
Welcome Geography Students	1
Reception	2
Keeping the Department Informed	2
Faculty Profiles and Contact Information	3
Maps	4
Campus	4
Bizzini Hall (Classroom Building) 2 nd Floor	5
GIS Lab	6
Bio-Ag	7

TWO

WHAT IS GEOGRAPHY?	8
Definitions	8
Areas of Geographic Study	9
General Readings in Geography and Teaching	10

THREE

YOUR PROGRAM	11
Advising	11
Registration	12
Geography Courses (from Catalog)	13
BA Geography Worksheet (regular tract)	14
BA Geography with Applied Concentration Worksheet	15
Geography Minor Worksheet	16
Liberal Studies with Geography Concentration Worksheet	17
Social Science with Geography Concentration Worksheet	17
General Education Worksheet	18
Plagerism and Academic Dishonesty	19
Readings – Coping with Classes	20
Internships	21

FOUR

GEOGRAPHY'S FACILITIES	22
Laboratories	22
The Field	22
GIS Lab	23
Bio-Ag	23
The Bridge	24
Study Abroad	25
Other Facilities	26

FIVE

LIFE AFTER CSUS	27
Occupations	27
Graduate School	28
Letter of Reference	29

one - welcome to geography

"Of all the disciplines, it is geography that has captured the vision of the earth as a whole."

Kenneth Boulding



WELCOME GEOGRAPHY STUDENTS!

This student handbook provides a way for you to track your degree progress and helps you navigate a path, not only to complete your degree, but to seek a profession in geography or attend graduate school. It serves as a convenient source for general information about the discipline of geography, department and campus resources, and who to contact with various questions.

This handbook does not replace the personal one-to-one contact between yourself and your advisor. We require that you meet with your advisor at the end of every semester before you register for next semester's courses. If you have specific questions about courses or your degree progress, ask your advisor. When you declare geography as your degree, you are automatically assigned an advisor. You may, at any time, request one of the other professors to be your advisor. It is your decision. Simply tell the department secretary who you want to advise you. The change will be made.

The department secretary, RayDelle Kistler, is a great source for advice and answers to general questions. She also keeps the faculty appointment books, so call her at 667-3127 or, better yet, go to C-215 (the department office) and sign up yourself if you need to make an appointment with a faculty member. You may also contact faculty by e-mail, phone or leave them a note in their mail box (located in C-215).

Most importantly, we want you to enjoy your academic experiences.

Dr. Michael Schmandt
Associate Professor and Chair of Anthropology and Geography
schmandt@toto.csustan.edu
Telephone (209) 667-3557

Related -----

Department Office 2
Faculty Profiles and Contact Information 3
Advising 11

2

DEPARTMENT OFFICE

Our office is located in Room C-215 in the Classroom Building (Bizzini Hall). It is usually open between 8:00 a.m. and 5:00 p.m., Monday through Friday (although summer hours are different). Office staff will do their best to help with any inquiries. They can aid you with:

- making initial inquiries
- leaving written messages for faculty
- handing in course work outside of class time
- returning past coursework held for one semester
- furnishing proper forms including (but not limited to) add/drop, withdrawal, refunds, name/address/contact change, individual study, change of degree objective, and graduation.
- scheduling self-guided field trips and general questions
- changing your major or concentration
- scheduling appointments with advisor or other faculty
- answering general questions
- arranging times for make-up exams

Ms RayDelle Kistler, *Department Secretary*
RKistler@csustan.edu
Telephone (209) 667-3127



KEEPING THE DEPARTMENT INFORMED

Keeping accurate records on all our students is not an easy task. We need up-to-date information on your address, telephone numbers, e-mail addresses, and name changes. If any of your contact information has changed recently, please submit a Notice of Name/Address/Contact Change form to the department Secretary.

CONTACTING GEOGRAPHY

Our address is:

Department of Anthropology and Geography
California State University, Stanislaus
Turlock, CA 95382

Telephone: (209) 667-3127

Fax: (209) 667-3324

Web site address: <http://www.csustan.edu/geography/geohome.htm>

FACULTY PROFILES AND CONTACT INFORMATION

Our department houses very active geographers who are involved in successful efforts of research, scholarship, creative activities, community service, and leadership in the discipline. The following list outlines the degrees, specializations, telephone numbers, e-mail addresses, and office location for each of our faculty members:

Chuck Bowen, (1998) Lecturer of Geography; B.S. 1964, University of Georgia; M.A. 1967, University of Georgia; Physical, Climatology, Environmental, Urban; 209.667.3127; C-218.



Ida Bowers, Ph.D., (1972) Professor of Geography; B.S. 1961, Central Michigan University; M.A. 1965, University of Hawaii; Ph.D. 1973, University of Hawaii; Environmental, Physical, Agriculture/Permaculture, Southeast Asia; 209.667.3221; IBowers@csustan.edu, C-215e.

Richard Eigenheer, Ph.D. (2000) Lecturer; B.A. 1961, UC Berkeley; M.A. 1966, CSU Sacramento; Ph.D. 1976, UC Davis; Cultural, Historical, North America, California, Tourism; 209.667.3127; dickgeography@comcast.net; C-218



Jennifer Helzer, Ph.D., (2001) Assistant Professor of Geography; B.A. 1986, University of California, Santa Barbara; M.A. 1993, California State University, Chico; Ph.D. 1998, University of Texas, Austin; Cultural, Historical, Ethnic, North America; 209.667.3010; JHelzer@csustan.edu; C-237b.

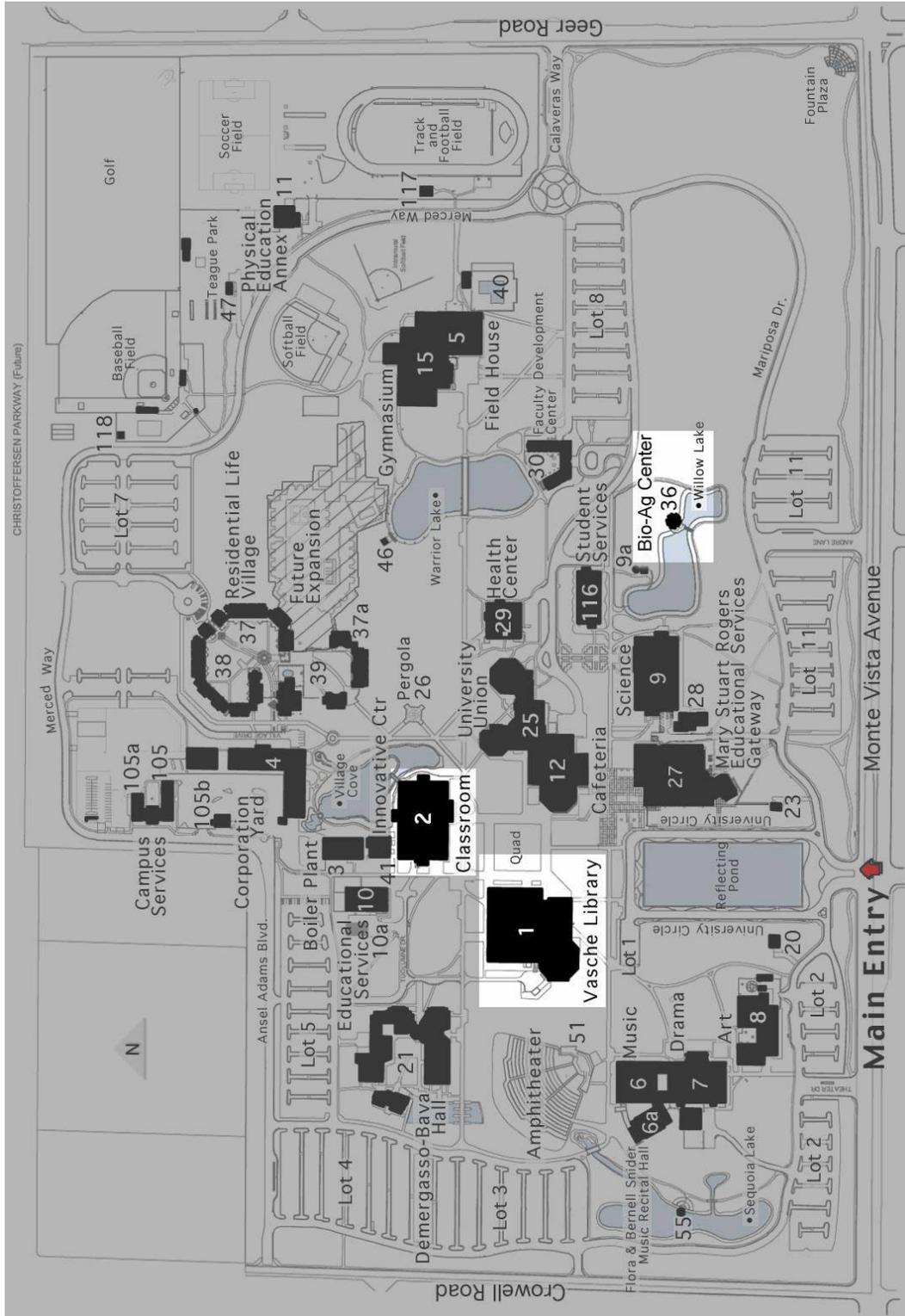
Eric Karlstrom, Ph.D., (1989), Professor of Geography and Honors Program; B.S. 1971, Northern Arizona University; M.A. 1977, University of Wyoming; Ph.D. 1981, University of Calgary, Canada: Physical, Environmental, Geomorphology, Soils, Quaternary Studies, Geoarchaeology; 209.667.3479; estrom@toto.csustan.edu; C-216a.



Michael Schmandt, Ph.D., (1994), Associate Professor of Geography; B.A. 1987, California State University, Fresno; M.A. 1991, Arizona State University; Ph.D. 1995, Arizona State University; Cultural, Urban, Regional, GIS, Field Methods; 209.667.3557; schmandt@toto.csustan.edu; C-217.

4

GENERAL MAP OF CAMPUS



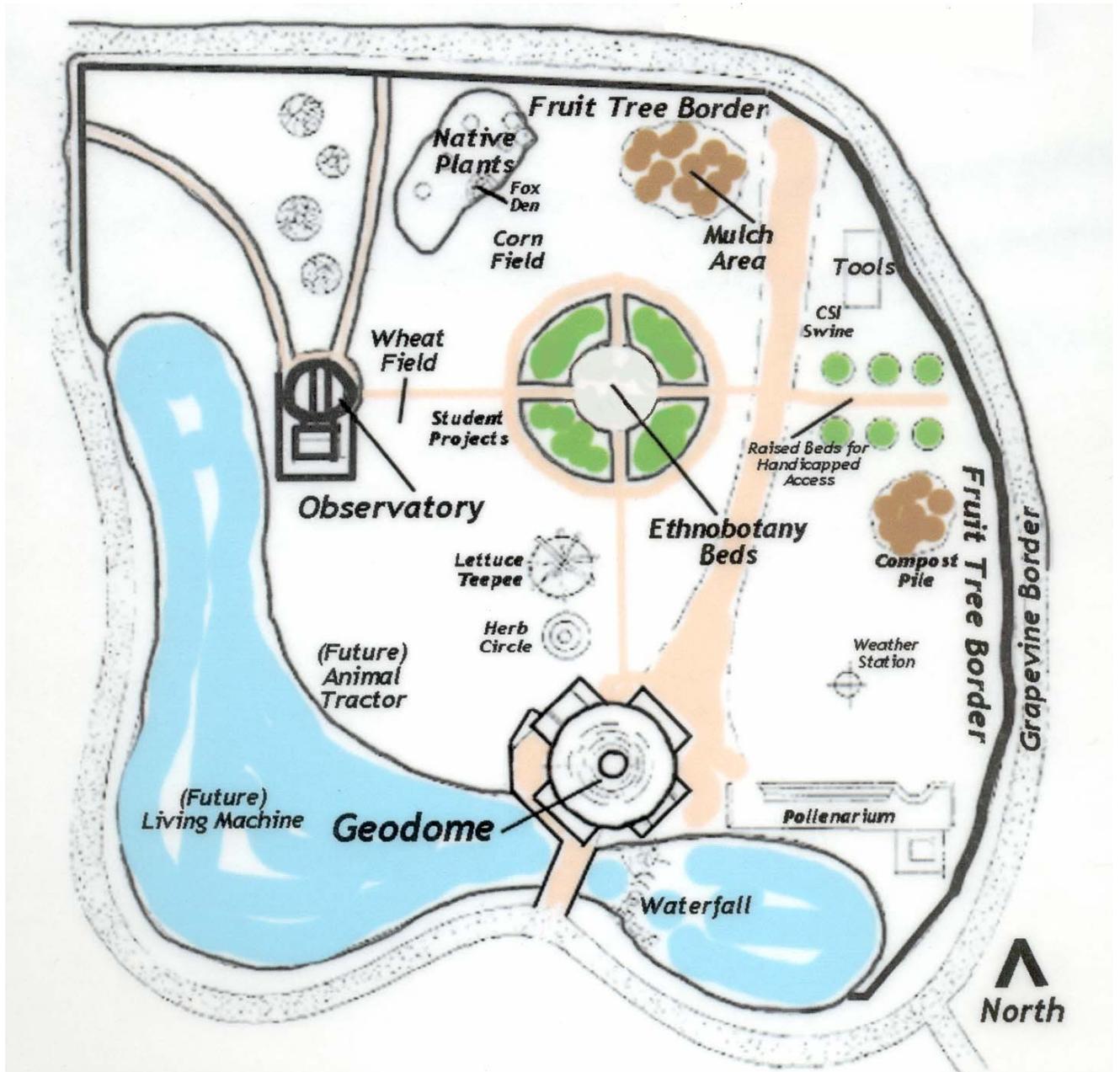
6

GIS LAB MAP (VASCHE LIBRARY BLDG)



7

BIO-AG MAP





8

two – what is geography?

“Geography is the study of earth as the home of people.”

Yi-Fu Tuan

DEFINITIONS

Geography studies the world in which we live and on which we depend; it is a subject that is both exciting and highly relevant. Peoples, environments, regions, and landscapes interweave, and geographic analysis helps us understand them. Geography's unique combination of knowledge and analytical techniques, produce a clear understanding of the interaction between the environment and people including human impacts on the environment and its effects on us.

As an integrative discipline, drawing on data and knowledge common to many physical sciences, social sciences, and humanities, geography encourages students to develop a spatial perspective to explore key issues facing society and the environment. Thus, geographers offer society, government, and academia a perspective that emphasizes the character of place, patterns and processes, and locational analysis. We contribute to a better understanding of today's world and improve projections for a future one (Graf, Will, 1999, “Not Clueless, Just Skill-less” *Association of American Geographers Newsletter*, 34:1, p 1).

If you like to travel, use and read maps, learn about peoples and places, and collect and analyze data; chances are you're a geographer at heart. If you are interested in teaching, exploring new landscapes, analyzing the relationships between people and their environment, using and applying new computer technologies, creating better places, or solving environmental problems, then geography is an ideal major.

Geography graduates are in demand. As the Association of American Geographer's pamphlet on Careers in Geography states, “more geographers than ever before are employed in exciting jobs, using skills in cultural, regional, and physical geography as well as modern technologies that have revolutionized the workplace.”

Related -----

Areas of Geographic Study 9
General Readings in Geography and Teaching 10
Occupations 27

9

AREAS OF GEOGRAPHIC STUDY

The discipline of geography can be divided into subfields. These include *human geography*, which studies the spatial aspects of human settlement, cultures and human uses of the Earth's environments; *physical geography*, which studies spatial patterns, processes, and interrelationships in the natural environment; *regional geography*, which involves the study of human and physical geography of defined world regions; and *methodology*, which employs principles, techniques and tools of the discipline such as maps, aerial photographs, computer software, satellite imagery, and field instruments.

The Association of American Geographers lists a number of specialty groups (most of which are subfields) that their member geographers belong to. There are more subfields than the following list includes (and there are specializations within many of the following subfields. For example, the subfield of geomorphology can be broken into many specializations including fluvial geomorphology, glacial geomorphology, soils, and quaternary studies), but it provides a peek into geography's breadth.

Africa	Hazards
Applied Geography	Historical Geography
Asian Geography	History of Geography
Bible	Human Dimensions of Global Change
Biogeography	Indigenous Peoples
Canadian Studies	Latin American
Cartography	Medical Geography
China	Microcomputers
Climate	Middle East
Coastal and Marine	Military Geography
Communication Geography	Mountain Geography
Community College	Political Geography
Cryosphere	Population
Cultural and Political Ecology	Qualitative Research
Cultural Geography	Recreation, Tourism, and Sport
Developing Areas	Regional Development and Planning
Disability	Remote Sensing
Economic Geography	Retired Geographers
Energy and Environment	Rural Geography
Environmental Perception and Behavioral Geog	Russian, Central Asian, and East European
Ethics, Justice, and Human Rights	Sexuality and Space
Ethnic Geography	Socialist Geography
European	Spatial Analysis and Modeling
Geographic Information Science and Systems	Transportation Geography
Geographic Perspectives on Women	Urban Geography
Geography Education	Water Resources
Geography of Religions and Belief Systems	Wine
Geomorphology	Worldwide Web
Graduate Student	

Related -----

General Readings in Geography and Teaching 10

10

GENERAL READINGS IN GEOGRAPHY AND TEACHING

The following are brief readings that cover the importance and relevance of geography. Ask your advisor for additional general readings or for focused reading materials on a specific subfield.

"Rediscovering the Importance of Geography" by Alec Murphy.
(Murphy, A. 1998. Rediscovering the Importance of Geography. *Chronicle of Higher Education*, October 30, 1998: 33.)

"Why Study Geography?" by Heather Viles and Alisdair Rogers.
(Rogers, A and H. Viles. 2002. *The Student's Companion to Geography*. Pages 3-5. London: Blackwell.)

"Thinking like a Geographer" by Peter Gould.
(Gould, P. 1999. *Becoming a Geographer*. Pages 220-234. Syracuse University Press.)



Related -----

Definitions 8

Rediscovering the Importance of Geography

As Americans struggle to understand their place in a world characterized by instant global communications, shifting geopolitical relationships, and growing evidence of environmental change, it is not surprising that the venerable discipline of geography is experiencing a renaissance in the United States. More elementary and secondary schools now require courses in geography, and the College Board is adding the subject to its Advanced Placement program. In higher education, students are enrolling in geography courses in unprecedented numbers. Between 1985-86 and 1994-95, the number of bachelor's degrees awarded in geography increased from 3,056 to 4,295, and graduate enrollment grew by more than 30 percent. Not coincidentally, more businesses are looking for employees with expertise in geographical analysis, to help them analyze possible new markets or environmental issues.

In light of these developments, institutions of higher education cannot afford simply to ignore geography, as some of them have, or to assume that existing programs are adequate. College administrators should recognize the academic and practical advantages of enhancing their offerings in geography, particularly if they are going to meet the demand for more and better geography instruction in primary and secondary schools. We cannot afford to know so little about the other countries and peoples with which we now interact with such frequency, or the dramatic environmental changes unfolding around us.

From the 1960s through the 1980s, most academics in the United States considered geography a marginal discipline, although it remained a core subject in most other countries. The familiar academic divide in the United States between the physical sciences on one hand, and the social sciences and humanities on the other hand, left little room for a discipline concerned with how things are organized and relate to one another on the surface of the earth--a concern that necessarily bridges the physical and cultural spheres. Moreover, beginning in the 1960s, the U.S. social-science agenda came to be dominated by pursuit of more-scientific explanations for human phenomena, premised on assumptions about global similarities in human institutions, motivations, and actions. As such, regional differences often were seen as idiosyncrasies of declining significance--or at best as simple backdrops to human affairs.

Although academic administrators and scholars in other disciplines might marginalize geography, they could not kill it, for any attempt to make sense of the world must be premised on some understanding of the changing human and physical patterns that shape its evolution--be they shifting vegetation zones or expanding economic contacts across international boundaries. Hence, some U.S. colleges and universities continued to teach geography, and the discipline was often in the background of many policy issues--for example, the need to assess the risks associated with foreign investment in different parts of the world. By the late 1980s, Americans' general ignorance of geography had become too widespread to ignore. Newspapers regularly published reports of surveys demonstrating that many Americans could not identify major countries or oceans on a map. The real problem, of course, was not the inability to answer simple questions that might be asked on *Jeopardy!*; instead, it was what that inability demonstrated about our collective understanding of the globe.

Geography's renaissance in the United States is due to the growing recognition that physical and human processes such as soil erosion and ethnic unrest are inextricably tied to their geographical context. To understand modern Iraq, it is not enough to know who is in power and how the political system functions. We also need to know something about the country's ethnic groups and their settlement patterns; the different physical environments and resources within the country; and its ties to surrounding countries and trading partners. These matters are sometimes addressed by practitioners of other disciplines, of course, but they are rarely central to the analysis. Instead, generalizations are often made at the level of the state, and little attention is

given to spatial patterns and practices that play out on local levels or across international boundaries. Such preoccupations help to explain why many scholars were caught off guard by the explosion of ethnic unrest in Eastern Europe following the fall of the Iron Curtain.

Similarly, comprehending the dynamics of El Niño requires more than knowledge of the behavior of ocean and air currents; it is also important to understand how those currents are situated with respect to land masses and how they relate to other climatic patterns, some of which have been altered by the burning of fossil fuels and other human activities. And any attempt to understand the nature and extent of humans' impact on the environment requires consideration of the relationship between human and physical contributions to environmental change. The factories and cars in a city produce smog, but surrounding mountains may trap it, increasing air pollution dramatically. Today, academics in fields ranging from history to economics to conservation biology have turned to geographers for help with some of their concerns. Paul Krugman, the noted economist at the Massachusetts Institute of Technology, for example, has turned conventional wisdom in economics on its head by pointing to the role of historically rooted regional inequalities in the structuring of international trade.

Today geographers work on issues ranging from climate change to ethnic conflict to urban sprawl. What unites their work is their focus on the changing organization and character of the earth's surface. Geographers examine changing patterns of vegetation to study global warming; they analyze where different ethnic groups live in Bosnia to help understand the pros and cons of different administrative solutions to the civil war there; they map AIDS cases in Africa to learn how to reduce the spread of the disease.

Geography is reclaiming attention because it addresses such questions in their relevant spatial and environmental contexts. A growing number of scholars in other disciplines are realizing that it is a mistake to treat all places as if they were essentially the same (think of the assumptions in most economic models), or to undertake research on the environment that does not include consideration of the relationships between human and physical processes in particular regions. Still, the challenges to the discipline are great. Only a small number of primary- and secondary-school teachers have enough training in geography to offer students an exciting introduction to the subject. At the college level, many geography departments are small; they are absent altogether at some high-profile universities.

Perhaps the greatest challenge is to overcome the public's view of geography as a simple exercise in place-name recognition. Much of geography's power lies in the insights it sheds on the nature and meaning of the evolving spatial arrangements and landscapes that make up the world in which we live. The importance of these insights should not be underestimated at a time of changing political boundaries, accelerated human alteration of the environment, and rapidly shifting patterns of human interaction.

Alexander B. Murphy is a professor and head of the geography department at the University of Oregon and a vice-president of the American Geographical Society.

Why Study Geography?

Heather A. Viles and Alisdair Rogers

Deciding which subject(s) to study at university is always a challenge and you will receive a barrage of advice from teachers, family, friends and other advisers. Open days and prospectuses also tell you a lot, but it can be hard to make comparisons between subjects and judge what you personally will gain from each course. Everyone who gives you advice is biased to some extent, and no one can really answer the question 'what should I study?' except you. Our experiences as students and, more recently, lecturers in geography departments have convinced us that geography is an exciting and worthwhile subject to study for the reasons that we outline below. Read on and see what you think . . .

Geography as a subject is incredibly diverse. You'll get some idea of the breadth of current geographical research and teaching by looking at the chapter headings in Part II of this book. Walking through any geography department, or browsing through their web pages, you will find research specialisms ranging from the hard-core scientific (such as using pollen from cores collected from peat bogs to reconstruct past environmental conditions) to the skilful and careful understanding of different cultural contexts at home and abroad. Some geography lecturers and researchers lock themselves away in front of computer screens all day looking at output from complex computer models, whilst others trudge up and down arctic hillslopes monitoring water movements.

Some are living among and participating with the communities that intrigue them. Others spend hours in libraries doing scholarly research. This inherent diversity at the geographical research frontier feeds directly into course structures and content. There are few subjects in universities today that will provide you with the wide range of information and understanding that is essential for making sense of the world around you. Geography straddles the so-called divide between social and natural sciences, enabling you to make the kinds of informed and critical judgements demanded of citizens in the twenty-first century.

Geography as a subject is relevant. Geographers are tackling many of the big questions facing the world today in terms of how the environment works and how human societies interact with it. Geography is all around you in newspapers, on television and in your environment. This relevance means that geography is always changing and developing, as a result of new challenges coming from the real world. For example, the growing concern over global warming and climatic change has had a real impact on geographical research and teaching, as have the evolution of the new global economy and the protests against globalization. Whether the issue is global security, genetic engineering, flood risk, or the diffusion and impact of new communications technologies, geographers are contributing significant research and often original insights. Lecture

courses on topics such as natural hazards or international migration, for example, have to be continually updated in the light of new events, changed policies and scientific findings.

Studying geography can change your life, by opening up new horizons, exposing you to new challenges and giving you new skills. The diversity of subject matter on offer can allow students to pursue a very wide range of topics, mixing and matching from a whole host of different areas of the subject. This can be very rewarding and lead to your making connections and finding insights that would not be possible in a narrower course of study. Alternatively, the diversity of geographical topics on offer can enable students to focus on one or two areas in ever-increasing detail, so that they become real experts in a narrow range of topics which they might never have imagined wanting to pursue at school. As well as being diverse in subject material, geography at university is also diverse in terms of study methods and skills. On most geography courses you will be exposed to some aspects of computing, field research (often in groups), social survey, interpretation of texts, laboratory work, debate and discussion, reading and essay production as well as individual project or dissertation work. Geography, from its earliest days as a subject, has always had a core focus on maps and spatial patterns and in recent years computer-based geographical information science (GIScience) has become an important component of many geography degree courses. Life as a geography student is never dull and repetitive, and many of the skills that you learn will enhance your career prospects and be of lasting value.

Geography as a subject is challenging. Never believe anyone who tells you that geography is a subject for duffers who can only colour in maps and can't cope with a 'real' subject. Albert Einstein, in his diaries, is quoted as saying that he originally wanted to study geography but found it too difficult and so decided to study physics instead! Studying geography will not only improve

your knowledge of the world, but it will also make you re-evaluate your ideas and challenge your creativity. In the first term of our geography degree courses one of us fell into a muddy salt marsh creek in what seemed like a blizzard, read some fascinating and inspiring books, and was encouraged to defend our ideas in small group discussions. Many geography courses require, or encourage, students to produce a dissertation based on their own, individual research, and some provide opportunities for relevant work experience or study elsewhere. Doing a dissertation (as you can see in more detail in Part III) is both a challenge and an opportunity. To take a subject that interests you and investigate it in detail (often contributing to a lecturer's bigger project, and sometimes producing results that are publishable) can be one of the most stimulating parts of the course. One of our recent students, for example, wanted to study volcanoes and ended up going to Lanzarote (with her family as field assistants!) and doing fieldwork on the weathering of old lava flows. On her return, she spent some time in our laboratories investigating her samples in detail. Her results were of such interest that we have now written a paper for a scientific journal on them, which should be published soon. Doing the dissertation, and making such a good job of it, convinced the student that she wanted to go on and do further research – which is what she is now doing at another university.

Geography opens doors. Despite (or perhaps because of) the fact that geography is not a vocational subject, there are many career and further study options open to geographers. Employers seem to like geographers – perhaps because we are generally outgoing, enthusiastic and have basic numeracy, literacy and often project design skills. According to the RGS-IBG, geographers are among the most employable of all graduates. GIS techniques are used widely by many businesses and government agencies, and thus geography students with GIS interests and experience have specific em-

ployment prospects. However, most geography students enter careers in administration and management, marketing or finance. Many other students start legal training after a geography first degree. Teaching geography is another career option, and there are many jobs available with an environmental dimension which geographers commonly apply for. Many students are pursuing further studies after their undergraduate degree, with Master's programmes (as described in Part VI of this book) attracting many who want to develop their interests and skills in particular areas, such as GIS and remote sensing, area studies or environment and development. Not all students, by any means, end up in careers which directly use their geography degree, but most find the skills they have developed of help in the future. Organizations such as the RGS-IBG (<http://www.rgs.org.uk>) and the Geographical Association (<http://www.geography.org.uk>), which run popular lecture programmes on geographical subjects, help

those interested keep up with geography, and provide a positive forum for promoting geography at all levels to all people.

Like any degree course, geography is what you make it and how much you put in determines how much you will get out. You've heard our opinions, and no doubt other people will highlight other aspects of geography which make it particularly good in their eyes. The proof of what geography is all about is in the subject itself, not in what we say about it, and there's a lot on offer in today's geography, as the rest of the chapters in this book demonstrate.

Further Reading

Craig, L.E. and Best, J. (eds) 2000: *Directory of University Geography Courses 2001*. London: Royal Geographical Society with Institute of British Geographers. A comprehensive guide to geography courses at undergraduate and graduate level in the UK, with information on course topics, structures and staff.

[The following chapter, pp. 6–10, is a photographic essay, entitled 'A Geographer's Eye . . . (Four Days in Newcastle)'. See p.10 for the commentary on the photographs.]

Thinking like a Geographer

The Old English *thencan*, to think, and *thencian*, to thank, are closely related. . . . Is thinking a giving of thanks? . . . Or do thanks consist in thinking?

—Martin Heidegger

What Is Called Thinking!

COMPARED to the geographic wasteland south of your border, geography appears to have fared well in Canada, both as a formal discipline extending our understanding by illuminating the human and physical worlds, and as a subject taught at all levels to create informed and aware citizens. I know you think much remains to be done, and perhaps things always look a bit greener on the other side of the hill, but I hope you will not mind my somewhat envious gaze. In fact, when I received the five volumes of the “curriculum guideline” for geography, issued by the Ontario Ministry of Education for the intermediate and senior divisions of your high schools,² my feelings were not so much envy as panic, a panic that rapidly induced something close to intellectual paralysis. Because in a moment I can only describe now as utterly weak and foolish, I started to read them, only to learn that your senior students “analyze, interpret . . . explain . . . design and develop networks, systems and simulations that involve six or more variables.”³

In retrospect, I still think my panic was justified. After thirty years of hard postdoctoral work, I have reached the point where I can think about the interactions of maybe three variables, but hardly the combinatorial possibilities of six. Such ineptness would mean that I might just squeeze into your tenth grade, and from there slowly work my way over the next two years towards those Olympian heights of analytic thought where dwell Ontario’s high school graduates.

Given initially as the Plenary Address at the meeting of the Ontario Association for Geographic and Environmental Education, Toronto, 1989, and subsequently published in the *Canadian Geographer* 35 (1991): 324–33

A Sense of Calling

Well, of course, I am teasing you—at least just a little—but I can assure you that my panic was real. “What,” I said to myself, “what on the face of the earth can I possibly say to these people?” And then I calmed down a bit, and in one of those conversations with oneself that we call thinking, I thought, in good dialectical fashion, exactly the opposite. What, as a teacher and as someone who loves teaching, what could I *not* say to my fellow teachers and geographers? After all, we had made the same choice, going into teaching for the vast material rewards that are so familiar, those huge paychecks piling up each month at the bank as we desperately try to spend them.

No, we know that was not the reason: our hearts are pure, even if our bellies are half full (which is probably better for our cholesterol count anyway). No one goes into teaching—no one *should* go into teaching—without having felt that tug of calling, that sense of commitment, that deep intuitive knowledge that teaching young people is a privilege—and the most important thing in the world. In a sense, they are us, but perhaps, in a deeper sense, we are them, because they are our hopes for a more decent future.

Oh yes, we get tired, of course we do. There is not one teacher here today who has not returned home exhausted, sucked dry, after giving, giving, giving all day long, with half the day’s work unfinished and still facing you after the evening meal has been cleared away. It is tough being married to a teacher. The homework has to be corrected by tomorrow; those papers and essays, whose grammar, spelling, and structure do much to increase the sale of strong drink, have to be read and corrected without the sarcasm of fatigue showing through. And sometimes, in our marginal comments, we fail, leaving us remorseful for our misuse of power, or perhaps somewhat pugnaciously gleeful that the careless little nitwit now realizes that we are human too.

A Sense of Communion

But we have all felt at one time or another that empty feeling, when our personal storehouses of intellectual strength and variety seem empty, when our geographic granaries have only a few grains blown across the floor by a chill wind. Then we need renewal, and in our thoroughly human endeavor of teaching, that means contact, connection, and communication. There is a lot of talk today—or perhaps “jabber” would be a better word—about communication, but let us stand still for a moment and listen to the word. At its root is *munus*,

a present, so *com-munis* is “with present,” a sharing, a giving of gifts.⁴ We share our professional and personal gifts with each other in many ways: in the quiet solitude of an intense encounter with an author who, by publishing, by the courage of a “making public,” invites us to share in his or her own delight of discovery and thinking; in daily contact with colleagues and students, who act as intellectual antennae, who say excitedly, “Hey, did you see this . . . ?” or who ask the apparently naïve questions that stick like burrs and irritate and itch until we are forced to scratch them; and in special occasions of professional meetings, not just in the formal sessions, but perhaps in individual conversations, or in the small groups that form transiently like eddies out of the flow and flux along hotel corridors, dining places, and small corners out of the wind.

I would not dare to bring and share with you presents of geographic substance, of opinions about curricula, of advice in your daily tasks of teaching. To do so would be impertinent, if it were not so pathetically naïve. What I can perhaps share with you are what I would like to call the “wellsprings of the teacher,” reminders of the larger, informing context to our daily, substantively pedagogic, lives down there in those classroom trenches. Some, are presents I hope you have not opened before, created out of the delight of my own encounters with those who held presents out to me. Others have been passed down, with love and respect, from an Academy now over 2,500 years old. Like one of your lovely Eskimo statues, they have acquired their brilliant polish of relevance and shine of meaning for us today through the passing of many hands upon them.

A Sense of Disquiet

There seems to be some sense of disquiet about the relevance of the geographic perspective today. We have to hustle and display our wares in the marketplace; we hope our “show and tell” sessions will meet with the approval of . . . THEM. I do not think anxiety has ever been so misplaced: we stand today at the threshold of a time when the geographic wheel of fortune has come full circle. Or rather the hermeneutic circle has spiraled upward, for we are not where we started, and our interpretive stances are different today. In this day and age, we will not find our relevance in the presence of Humboldt’s *Kosmos* or Reclus’ *Géographie Universelle* in every educated home—and there are many more of these today than in the nineteenth century, thanks, precisely, to universal schooling and concerned teaching: No, our contributions, our *Kosmoses* and *Géographies*, lie today not on the coffee tables and bookshelves, but out there

in a world increasingly aware that an understanding of the once-neglected spatial and geographic dimensions of human existence is crucial for working toward, for enlarging, the conditions of possibility for more decent, more humane lives.

We live in “interesting times,” conditions, you will recall, of what once formed an ancient Chinese curse, in a culture that prized tranquility, that induced a don’t-rock-the-emperor’s-boat mentality above everything else. I would give that saying, “May you live in interesting times,” as a blessing. I dare you to say the reverse. One life to live, no rehearsals: Would you really live it in “uninteresting times”? What child of our Western world, of the driving Greek inheritance, longs for ennui? Not me. More than just interesting, these are exciting times, especially for geographers, full of possibilities, all capable of writing geographies on the face of the earth, and they demand our best efforts in teaching and research. And, perhaps especially, in transforming research into teaching.

Let me explain what I mean in a sort of bricolage of geographic thinking that may capture some of the ferment of geographic concern today. I use the term *bricolage* advisedly, because we are going to roam all over the intellectual map—which is exactly what geographers ought to do. There are not many fields today that allow such intellectual peregrinations and explorations. We all know we live in an increasingly specialized world, where knowledge, and therefore understanding, becomes more and more fragmented. To cut deeper in our sciences, we have to break the disciplines into ever-smaller shards of specialization to keep the edges bright and sharp. I ask you: What other disciplines, other than philosophy and history, still have the capacity to combine the scientific with the humane, to inform rigorous inquiry with human care?

A Sense of Relevance

We live in democracies, and it is fashionable to sneer at their failings, until we see what happens to people in authoritarian states where “the party knows best.” Not all the students in Tiananmen Square, not all the Poles, not all the young people moving from East to West Germany can be misguided. We take too lightly the world into which we have been thrown, a world of possibility wrong by many lives out of tyranny—as Edmund Burke knew only too well. Oh, it is not perfect. For all the tautological skill of a Voltaire, it is not Candide’s “best of all possible worlds.” But in the last resort, even as a country passes four ever more tightly controlling National Security Acts in one century,⁵ even

as civil servants sidetrack one Freedom of Information Act after another,⁶ we can still throw the rascals out. Providing, of course, that geographic space is partitioned so that each voting member of the *demos* has equal weight—unlike the state of Georgia until quite recently, where one vote in the country counted for ten votes in the city.

It is no accident that geographers have been called upon to solve difficult reapportionment problems, essentially optimization problems of geometrical combinatorics under constraints.⁷ Nor is it an accident (for example, in Britain) that a number of geographers are in the forefront of informing a wider public of the dangers to democracy of gerrymandering,⁸ the twentieth-century equivalent of creating rotten boroughs, with the resulting disenfranchisement of more and more people. In Britain, the Social Democratic Party wins 26 percent of the vote and 3.5 percent of the seats in the House of Commons. In the European elections, two million votes are cast for the Greens, but not a single member is seated in the European Parliament. Democracy, my Michael Foot.

These, of course, are geometrical solutions undertaken for moral ends by employing the combinatoric searching power of large computers. Is it an accident that geographers provided the combinatoric evidence used in a federal court to break the spatial machinations of school boards to disenfranchise major ethnic groups in Detroit?⁹ Is it an accident that geographers of great imagination have broken the logical backs of tame statisticians employed by national atomic power and weapons production consortiums,¹⁰ statisticians who chorus “clusters of children with leukemia can occur just by chance,” to which we might reply: “Around the Sellafield reprocessing plant, declared by international authorities to be the filthiest, most dangerous, most polluting source in Europe?” Is it an accident that geographers have nailed to the wall the tame statistician’s excuse that “You can get any degree of clustering you wish just by changing the recording area?” How did the geographer do it? By examining the clusters of children with leukemia at *all* geographic scales, generating in northern England eight million rigorous Poisson-based tests, and plotting the quadrat circles whenever the stringent threshold of significance was reached. In an old and fine scientific tradition, the evidence is visual, cartographic; it lets you say, “I see!” as the light of understanding dawns on you when you see a great black blob, circle overlaid upon circle, significant clustering of dying children at all scales. No wonder it was published in the *Lancet*; no wonder the medical profession today is raising the question again, despite government inquiries and reports that tried to lay it in its quiet Establishment grave.¹¹

But there is more. Out of this act of geographic imagination, using the computer to do something we could not do before, rather than just doing the same old stuff faster, came an act of original geographic discovery: the unexpected, the serendipitous, came out of concealment—like Columbus bumping into the Americas. On the East Coast was another huge black blob, significant quadrat piled on significant quadrat, totally unsuspected. In the middle of it was a huge urban incinerator, firing, it is suspected, at much lower than designed temperatures, spraying carcinogens over the area. Is it a cluster produced only by pure chance? Try GAM, the Geographical Analytical Machine, with Wilm’s tumor, a cancer we know is genetically caused, and nothing happens. Try it with randomly generated artificial data—no black blobs. Put that in your pipe and smoke it, Hired Statistician. And remember, your smoking of that pipe does not *cause* cancer of the lip and jaw: correlation is not causation; may you and your consultant’s check from the Tobacco Institute rot in hell.

A Sense of Justice

So who says geographers have nothing to say? The deep ontological roots of *dikē*, of justice, that we prize out of our Greek heritage, the *dikē* that transforms to a “meet and right” in a *Book of Common Prayer*, that is reshaped as fairness and inalienable right in an Enlightenment that still deeply informs and underpins our sense of democracy today, these possibilities for just solutions rest on a thoroughly geographical foundation. The sense of caring for children thrown into an atomic age is so lit up by geographic inquiry that even the most cynical Establishment is forced to take notice.

Let me give you two further examples out of my own recent experiences. There are honorable traditions of inquiry in our eclectic field and we choose between them, to the exclusion or denigration of some, only at the price of public, not to say intellectual, relevance. Theory-praxis, regional-systematic, quantitative-qualitative, human-physical, analysis-synthesis, space-time—these are choices to be made, stances to be taken, paths to knowledge to choose in light of a particular problematic that we see. Or does the problem sometimes reach out and grab us, like a melody granted to a Mozart?

When Chernobyl went off, and that radioactive plume deposited radionuclides over Europe, it was clear that literally scores of those specializations into which we have been forced to partition our knowledge—and let us admit we have no choice—scores of these were going to be involved. The fields include agriculture, anthropology, atomic physics and engineering, biology, botany,

chemistry, economics, forestry, game management, law, limnology, medicine, meteorology, ornithology, pediatrics, politics, zoology—literally scores of those sharp disciplinary shards into which our world of knowledge is broken today, including, quite tragically, psychiatry, to help those whose “world” had been so shattered by that blast in Ukraine that they no longer wished to be. I know: I talked to such scores, from Academy of Science members to young Sami reindeer herders in Sweden and Norway. Because the problematic I saw, as I wrote *Fire in the Rain*,¹² was a level of intellectual fragmentation that only the old and honorable tradition of synthesis in geography could approach. And it was no accident that the subtitle was *The Democratic Consequences of Chernobyl*. I give you my word, the book did not start out as a muckraker, but the lying was so blatant and unashamed that no one could ignore the relation between national atomic dependence and Establishment dissimulation. As the director of France’s electricity board said, “You don’t tell the frogs when you’re draining the marsh.” So much for the *demos*. Even Aristophanes’ chorus of frogs is stilled after two and a half millennia.

I had no choice about that subtitle: sometimes books take over and write themselves and you are simply the one holding the pencil. It is almost certain to be a most unpopular book, disliked by both the pro- and anti-nuclear groups. But presumably we are not called professors for nothing. Writing geography as synthesis, trying to pull the threads of the fragmented physical, living, and human worlds together again, is not a popularity contest. We try to tell the truth. And since “the truth” may leave us slightly embarrassed today and draw forth the knowing smile of condescension at such distressing naïveté—poor innocent fellow, surely he still doesn’t believe in Truth?—then dare to think the reverse: let us hire teachers who are good at telling lies, whose training has been a fine honing in the art of dissimulation and the creative generation of false data. Let us hire Doctor Liar to further our cause of education for democratic empowerment.¹³ In our postmodern sophistication we may be embarrassed at the naïveté of truth, until we recall what a world wholly based on lies would mean.

A Sense of the Spatial

The second example, omitting all the details for the moment, concerns AIDS. For a year now, with colleagues at Ohio State and Carnegie-Mellon, we have been modeling the spread of AIDS, trying, out of that rich tradition of spatial diffusion in geography, to predict the next maps by making mathematically well defined the structure contained in spatiotemporal series of counties and quar-

ters.¹⁴ To the best of my knowledge, we are the only people in the world doing this and it looks as though we can predict the next map about 96 percent accurately. The implications for planning, for meeting the crisis, are obvious. We passed 100,000 AIDS patients in the United States last July (1989) and a conservative estimate predicts 329,000 by 1992.¹⁵ Hospitals in major cities are already overstressed, and we must think about new facilities, hospitals, hospices, and new forms of care for terminally ill patients.

But simple numbers, generated by traditional epidemiology down that time horizon, are not enough: to plan we have to answer that most geographic question: *Where?* And that is the problem: only geographers appear to see the human condition, to see an epidemic in space as well as time. One distinguished mathematician at the White House 1988 AIDS Conference in which I participated thought that “spatial modeling” meant running around from Alabama to Wyoming with a differential equation clutched in his hot little hand. And, of course, if the equation is nonlinear, so much the better, because it can lead to all sorts of exciting possibilities mathematically, none of which is of the slightest relevance for our understanding of AIDS in space and time. Not a single person has been made well, not a single transmission has been prevented, by this nonsense.

In contrast, geographic modeling helps directly with the task of effective intervention. First, it helps in the allocation of future, and always scarce, medical resources, by calling upon another rich tradition in our field, where spatial allocation and assignment algorithms are well known. But more important, it turns out that these map predictions, when incorporated into animated map sequences on a television screen, have a very strong impact, the very effects that people in health education call “cues to action,” that slam in the psychic guts that makes someone, particularly a teenager with the immortality syndrome of the young, stop short, become self-reflective, and think, deeply and personally, about forms of protection and behavioral change. Here, I am convinced, we are on a cartographic frontier of animated maps showing the spatial dynamics of all sorts of geographic phenomena. It is an area, we are rapidly learning, where you can throw out much that was passed on as unquestioned cartographic wisdom from a time when maps were static and printed on a page. There is little to guide us here at the moment and we shall have to find our own way.

Let me give you two examples. Who needs all that written text on a map when you have a voice accompanying it to explain? As for color, this is no longer a costly rarity but something that is taken for granted. And the cognitive psychologists can play with these problems as much as they like: in the final

analysis, their science has nothing to say in this essentially aesthetic domain — as Vincent van Gogh, writing to his brother from Arles, well knew.¹⁶ Sitting at my color palette at a Macintosh personal computer, I discovered, in a naïve and simpleminded way, what he knew instinctively: colors look different, and mean different things, when placed next to each other.

Let us admit quite openly that we are concerned here with graphical rhetoric, and I use that term in all its old and honorable sense of the “art of persuasion.” We want those animated, dynamic images to reach out to young people and persuade: there is no cure, no vaccine, only highly experimental drugs that prolong. To fight this dreadful disease all we have is persuasive education. Graphical rhetoric might persuade and so save some young lives. The secondary infections of AIDS are not pretty and the deaths are not quiet.

A Sense of Need

So who says geography and geographers have nothing to say? Where geographers acknowledge a genuine problematic—and our journals tell us that this is not always the case—where genuine problems reach out and grab us and are treated with all the imagination and illuminating power we can muster, then we have things of relevance to say that are the equal of anything in the physical, biological, and, perhaps especially, the human sciences. With pollution, hazard and risk assessment, epidemics, historical preservation, soft energy, pointing to the starkness of homeless lives, linking a global economic system to the specifics of place and restructured human lives, no wonder we hear a growing chorus of pungent and increasingly intellectually informed concern to reestablish the spatial in the social, to place human society back in its geographic dimensions from which it was torn by nineteenth-century sociologists and political economists.¹⁷ Calling upon the best of our tradition—and why call on anything else?—we have nothing to be anxious about and certainly nothing to apologize for. With the world going to hell in a handbasket, we need geographers, we need people open, aware, and alert to the spatiality of the human world, as we have never needed them before.

And I wonder how many of you would disagree with what only appears to be a provocative statement—initially, before quiet reflection acknowledges the obvious—namely, that geographers are born, not made. Like mathematicians, poets, and musicians, you are either granted that fascination with the spatial, and called to the geographic, or are you not. Oh, of course, much more is eventually involved: one has to be thrown into a world where geographic inquiry as

we know it stands as a condition of possibility, and, despite an initial calling, there is much to learn in formal ways, much to understand about the heritage in which one finds oneself. But many of you know the experience firsthand and can recognize it in a young person: that early fascination with maps, that wondering what lies beyond the horizon, that sense of relatedness in spatial juxtaposition, that intuitive awareness of geographic pattern and spatial structure, and how it allows and forbids. Some appear to have a sense of intuition, of intentionality, toward the geographic domain that translates into a caring and concern that marks a geographer's life path to the very point where the line in the space-time diagram is extinguished. Let me suggest that we would not be teachers of geography if we had not experienced such a granting to us ourselves. And out of our own wonder and excitement of the geographic realm, in all its eclectic ramifications, we know it has to be a component of education in a modern, democratic society with a genuinely empowered and informed citizenry. Just as poetry, music, mathematics, and a sense of historicity—of standing, alert and aware, in a particular historical heritage—just as these form crucial components of an educated life, so an informed awareness of the geographic domain must characterize responsible people inhabiting an increasingly interconnected world.

If we can back away from the immediate for a moment, what is it that grounds our concern for the geographic realm, either as teachers of others of all ages—kindergarten to adult education—or as those driven to inquire in the spatial domain? The answer should really come as no surprise. We are, after all, human, and when we ask a question of “ground” we are no longer in an ontic realm, the realm of things, but the ontological realm, where we are asking about the conditions of possibility for something to be. So there is nothing strange, nothing unusual, nothing esoteric in asking how geography, geographic teaching, geographic awareness, geographic inquiry “come to be” as thoroughly human endeavors. Questions of human ontology are as concrete as anything we are likely to think toward; we do not use words like “ground” and “fundamental” for nothing, or unthinkingly, or merely abstractly.

A Sense of Caring

These questions are very old: Martin Heidegger, drawing upon an ancient fable, tells how a personified Care went to a river's bank and shaped a piece of clay, and then asked Jupiter to give it spirit, which he did, providing that the newly formed creature would have his name.¹⁸ Typical male chauvinist.

But Care wanted her own name to be used (typical female chauvinist), and then Earth arose and demanded *her* name be used because she had given the clay out of which the creature was made. Eventually, Saturn came along and became the arbitrator and ruled: Jupiter gave spirit and shall receive it back at death, and Earth shall receive the body back into herself. But because Care shaped the form, it shall be hers as long as it lives; and it shall be known as *homo*, for it is made of humus, or earth. Human-earth relationships begin very early in our Western world and are permeated with Care from the beginning, a care that has the capacity to be translated into responsibility, husbandry, and stewardship.

And, of course, but regrettably, the equal condition of possibility for their opposite: for courageous Brazilian ecologists to be murdered in the Amazon, for the rape of an ocean by nylon nets 50 km long, for toxic dumping, for the *Exxon Valdez*, for loading plutonium 239 into light water reactors, . . . I do not have to go on. Perhaps you can begin to feel why we use this little parable in the beginning of a graduate seminar at Penn State, coupled with a beautiful, almost allegorical short story by the French novelist Jean Giono, *The Man Who Planted Trees*.¹⁹ Sandwiched between David Harvey's *Manifesto* the week before,²⁰ and John Imbrie's Fourier decompositions of 400,000 years of ice and seabed cores the next,²¹ some of the poor students are in a state close to cataclysmic shock—that numb look that says “What am I doing here, Mother?” But by the end of the semester, they have read and discussed slowly, thoughtfully, and thoroughly some thirty to forty professional and intellectually relevant papers and essays, with faculty and second-year students often sitting in. The students were, in fact, the ones who begged us not to drop the weekly readings and discussions at the end of the fall semester but to continue them throughout the academic year. And why? Because they care, and it is that grounded, ontological sense of caring that ultimately informs much of their own reading, thinking, and inquiring.

And it is, of course, that ontological condition of possibility that informs the moral domain. We do not talk about this much in geography: we perhaps talk about it too little as teachers. We are much more sensitive today to that “unexamined discourse” we call ideology.²² We are wary, and properly so, about indoctrination, and how easily power can be misused to slide education that way. Yet we care deeply to pass on a sense of heritage, and we believe, perhaps more profoundly than we care to acknowledge sometimes, in that Enlightenment ideal of a liberal education as a liberating education. Yet as teachers we are always “moral tutors,” to use the old designation of Oxford, still in use today;

not the least because we are present as teachers and our own caring is watched; not the least because we try, within the always contingent historical circumstances in which we find ourselves, to tell, to profess, the truth—at the very least, a truth. So our discourse, our thinking, our inquiries, and our writing are not just touched by, but are embedded in, the moral domain. Geography is a subject saturated with moral and ethical dimensions. We do care; we do try to teach “meetly and rightly,” even if we know that to some degree we always fail. After all, that is human too.

A Sense of Right

But take heart: we are not alone in our caring, in our understanding of the earth as the home of humankind. I think it is no accident that for the first time in what we might call the “moral history” of the Western world, philosophers are beginning to think toward an ethic of the future. Ethical questions always arise from, are embedded in, a given *ethos*: a humanly constructed set of moral obligations and sensibilities of what it is to do the right thing. They are, of course, culture- and place-bound: like any set of human constructs, they are not eternal, they are not immutable; they can change as a human culture itself unfolds into an unknown future. But all ethical “systems” — although I am uncomfortable calling them that—have dealt with present problems, problems of immediacy, problems of correct behavior, arising in the here and now. What's past is past; don't cry over spilt milk—even if we might feel guilty or ashamed. There is not much you can do about the past, and the future can take care of itself, because as finite mortals we are not gods and goddesses and cannot foretell what fate will bring us. This, by the way, is not *fatalism*: rather, it is the *amor fati*, the “love of Fate” of Nietzsche that lives joyously and resolutely in the times in which it finds itself.

But that blind stance toward the future is no longer good enough. Not because in our hubris we think we can now predict the future, that the world will unfold in predetermined ways if only we can find the right cogwheels in the human condition and compute their mechanical turnings with ever-larger computers. That stance simply cannot hold today for any morally touched person because we know what we are doing to our home, we know how we are fouling our own nest. Stream and lake sediments are laced with PCBs; aquifers are polluted with carcinogens; two kilograms of plutonium 239 if “properly distributed”—and here the quotation marks indicate that language itself breaks down under the obscene load it has to bear—could kill every person on earth,

and we have made tens of thousands of kilograms. Species variety shrinks with every chain saw started in the tropical forest; and . . . so . . . on. The “crazy ape” is on the loose. It is no wonder that Karl Otto Apel starts his seminal essay on a future-oriented ethnic with the global pollution problem, with the responsibility we have to future generations.²³ Radioactive iodine 131 has a half-life of 8 days; caesium 137, 28 years; strontium 90, 30 years; plutonium 239, 25,000 years.

It means we have to steer toward a cleaner, more decent world — not for our own sake so much as for our children and grandchildren unto the thousandth generation or more. Steering, as you know, is cybernetics, but that is really not what I am talking about here. In the short run, the run of simple trend, interpolation and extrapolation expressed in simple mathematical forms, yes, we can make some good guesses — some times and, locally, in some spaces and places. But in the long runs and global spaces I am talking about here, even the most rabid social engineer and technical “fix-it” turns silent. But we do not have to predict the future: what we require is not computer simulations that chaos theory tells us are doomed to failure anyway, but rather moral reflection on the consequences of acts that we know, out of our own ethos, are immoral and unethical. If, for the long run, we may not know exactly, but know nevertheless in our bones that things will not be right, then we can act only with prudence, intelligence, and judgment. And here we are right back in Aristotle’s *Nicomachean Ethics*,²⁴ where he calls them *phronesis*, *sophia*, and *gnome*. These are not old texts to be dusted off in a philosophy course; they are more shiniingly relevant to the human condition than anything we can think towards. Ignore them and there will not be a human condition much longer.

But prudence, intelligence, and judgment, thought and acted out by ethically touched and caring people, find themselves frequently in a world permeated by relativism and cynicism.²⁵ Both are deadly and are challenged by different geographers in different ways. Some announce the “only perspective” of a David Harvey,²⁶ sharing Marx’s moral outrage at a human condition not fit for beasts, a condition ignored by virtually all the nineteenth-century churches, whose clergy passed by on the other side. After all, the poor will always be with us. No wonder Marx excoriated religion as “the opiate of the people.” Other geographers hold to a postmodernity that categorically denies a single “way, truth, and light” and rejoices in a world of challenging plurality and different perspectives. This too can be morally informed, because plurality does not mean an anything-goes relativism. After the horrors that the tribes of Europe have brought us this century, we *know* — and how? from our ethos —

that not everything goes. It is a plurality of respect, of tolerance, of caring for ways not our own, *providing* within those ways there is seen to be a grounding respect and caring for the individual human person. Tolerance toward a pluralism is not an “anything goes”: it does not stand aside and look the other way when drug barons bring a country to its knees; when children in Londonderry are blown apart by others, whose own children are slaughtered in their turn, both in the name of the same god; when women are treated as chattels and physically mutilated by a religion preaching brotherhood but denying sisterhood;²⁷ when 15,000 young people disappear in an Argentina; when students in a modernizing China are shot down. Plurality can be a morally informed respect, a tolerance of difference that grants the marvelous mystery of place, of culture, and the vibrant weave of human life in its kaleidoscope of geographic settings. Canadians know this better than most, and to the degree that they can gently and caringly support each other in their identity and difference, they have much to teach others.

But here we touch upon another, perhaps final, wellspring of the teacher and geographer. It is the ability to feel and stand in awe at the very mystery of being, the mystery of our own human presence, of our being-in-the-world, and our capacity to give meaning to a world that is always interpreted by the human presence. What could be more geographic than that? It contains the mystery of human intentionality that leads to purposeful scientific inquiry. It holds the mystery of beauty that carries the aesthetic capacity to flood us with awe and joy. It leads to what George Steiner has called “the naked wonder of life,”²⁸ and contains the potentiality of the Not-Yet of Ernst Bloch.²⁹ We do not talk about these things very much. They touch, of course, the religious, but not the religious in any formal sense, not the religious of dogma and strident evangelical faith, tendencies to authoritarian gestures that require any democratic society to separate church from state. Rather, it is a religious sense capable of being shared by all human beings, toward the mysteriousness of being that leads to thinking and thanking. Thinking like a geographer is thanking like a geographer, and in the English language, with a major root in the Germanic, it is not surprising that these two words are so close. It is a sense that raises the question posed to Dante, “Chi fuor li maggior tui?”³⁰ translated very freely in its context as “Out of what world did you arrive?” or “What is the nature of your journey across time?” And we know as teachers, even if we do not dwell upon this question each day ourselves, that it has that shock-of-recognition immediacy for many of the young people who surround us; young people trying to learn who they are, where they are going; trying, Socratically, to know themselves a lit-

tle better. I have seen no mention of such wellsprings of inquiry and teaching, in any geographic publication. After all, what would a poor reviewer say to an editor when asked, "Are these things suitable for publication, for a 'making public'?" But why remain silent to that which called us to geography, that called us to teaching, to contribute to the human family in the way we were called? We do not have to sell geography. We only have to remain true to that calling and teach and learn in every way we can.



Thinking about Teaching

I HAVE ALWAYS loved teaching, especially those who want to learn, and I will go to hell and back to help students who are really trying, especially if they are building on a rather shaky foundation. I can recall *that* feeling very easily from my own schooldays. On the other hand, I become very impatient with the teach-me-I-dare-you's asleep in the back row, those who expect me, or some poor teaching assistant, to give them hours of private tuition the day before the exam, when lectures have been missed and carefully planned exercises left undone. And if they vent their chagrin on the teaching evaluations at the end of the course, let them. Most students are fair to the point of being generous, and if you lop off the top five percent who think you walk on water, and the bottom five who think you are a swine in swine's clothing, most teaching evaluations come out pretty fair.

The question of what to teach has always been difficult for me, and generally I tend to project my own delights and difficulties on the poor souls sitting expectantly in the lecture hall. I have always felt a bit of an idiot giving factual, narrative-type lectures, which, after all, are generally culled from someone else's work. Reading interesting stories and accounts has seldom presented much difficulty to me, and I assume others can read and summarize main points as well as I can. On the other hand, I remain unreformed (although today perhaps a somewhat more reflective) methodologist, delighting in finding new ways of approaching problems. Then, when I am thoroughly familiar with them, I enjoy exposing their weaknesses, the traps into which real thinking can be led.

Two of the essays in this section were written nearly twenty years apart for the same journal, the *Journal of Geography in Higher Education*. It has proved to be a wonderful forum for the exchange of ideas about teaching, from the very first issue, in which I was able to reflect on what was worth teaching in geography, to the present day. But what a difference in the journal itself! Starting as a mimeographed and stapled go-for-it-on-a-shoestring effort riding on the convictions, not to say the sheer guts, of David Pepper and Alan Jenkins, it has become the impeccably produced professional journal it is today.

11

three – your program

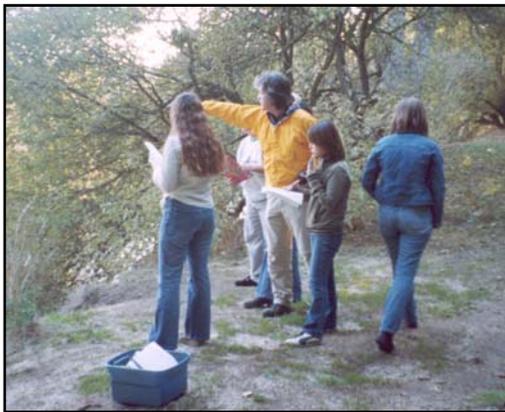
"As a young man, my fondest dream was to become a geographer. However, while working in the customs office I thought deeply about the matter and concluded that it was far too difficult a subject. With some reluctance, I then turned to physics as a substitute."

Albert Einstein

ADVISING

Geography students are assigned an advisor as soon as the department receives a copy of your transcripts. You may change your advisor at any time. Academic Advising is required each semester and takes place during approximately the last month of the semester. Make appointments early to protect your priority registration. To schedule an appointment, stop by C-215 and sign up in the appointment book, or contact RayDelle Kistler at (209) 667-3127, rkistler@csustan.edu. After you meet with your advisor, the academic hold will be lifted, and you may register for next semester's courses.

Bring along this binder when you meet with your advisor. With it, you can track your progress through your academic career in geography.



Related -----

Welcome Geography Students 1
Department Office 2
Faculty Profiles and Contact Information 3
Registration and Requirements 12

12

REGISTRATION AND REQUIREMENTS [Need to make a few modifications on this page]

Once you have met with your advisor and your academic hold has been lifted, you may register for classes. Here are several things to consider while registering for courses.

- Freshmen need to complete 1000-2000 level general education and prerequisite courses. Transfer students need to complete the lower division GE and prerequisite courses.
- Geography's prerequisites: Geography students must take GEOG 2010 and GEOG 2020 **OR** GEOG 2400 **OR** GEOG 2410 for a total of 6 units of prerequisites. Three units will cross count for D-2b of GE. GEOG 2020 will satisfy area (G) GE multicultural requirement.
- Remedial math: Freshmen students entering CSUS who have not qualified for GE math must take the appropriate pre-baccalaureate course depending on their placement score. All remedial coursework must be completed within the first year. Geography students in remedial math will complete either MATH 0103 & 0106 **OR** only MATH 0106. MATH 0106 will prepare you for any GE math course. After you complete MATH 0106, take a GE math course immediately to improve your chances for success.
- Remedial English: Freshmen students entering CSUS who have not qualified for GE English must take the appropriate pre-baccalaureate course depending on their score. All remedial coursework must be completed within the first year. Remedial English students will complete either (ENGL 0100 & 0111 **OR** ENGL 0111). ENGL 0111 will prepare you for ENGL 1001 **OR** 1002. After you complete ENGL 0111, take ENGL 1001 **OR** 1002 immediately to improve your chances for success. ENGL 1001 **OR** 1002 will satisfy GE A-2. After completing A-2 requirement, you can choose either ENGL 2000 **OR** PHIL 2000 to satisfy GE A-3.
- Baccalaureate degree requirements: All students need a minimum of 120 semester units of which 40 must be upper division. Of these degree units, 30 semester units must be completed at CSUS of which 24 need to be upper division, 12 need to be in the major and 9 need to be GE. All college coursework must be completed with a minimum grade point average of 2.0 (C) or better. Entering students with less than 15 units must complete three winter terms. Those entering with 15–74 units must complete two. Those entering with 75+ units must complete one winter term.
- Geography majors must complete 51 units of upper and lower division GE, 6 units of prerequisites (which up to 6 units can cross count with GE) and 36 units in the major, for a total of 90 units. The remaining 30 units needed to complete your BA degree, can be earned by taking additional geography courses, other electives, or declaring a minor in a related field.
- Upper division courses: Students with junior standing (60 semester units completed) are qualified to take most 3000-4000 level courses. Some courses are offered every semester, but some courses are offered just once an academic year or even once over two academic years. Please consult with your major advisor for information regarding course selection and sequencing.

Continued next page -----

- Upper division general education requirements: All students must complete 9 units of upper division GE coursework: 3 units from natural science and math, 3 units from humanities, and 3 units from social, economic, and political institutions and human behavior. These courses must be taken no earlier than the term in which upper-division status (completion of 60 semester units) is attained. Students **MAY NOT** cross-count upper division GE with courses offered in their major (or in an area of concentration within a major). Students **MAY** cross count upper division GE with a minor, but consult with your minor advisor for approval. As an alternative, students may complete all 9 units of upper division GE coursework by enrolling in the Summit Program (choose any of the clusters).
- WPST (writing proficiency screening test): All students are required to pass the WPST exam and receive a C- or better grade in a WP course. After completing the critical inquiry course in English, Philosophy, or Communication Studies (A-3), sign up to take the WPST exam. If you score 7 or higher, you qualify to take a WP course. The geography department offers one WP course, GEOG 4710, which meets the writing proficiency requirement for graduation and satisfies a major requirement, but a student may take a WP course from outside the major.
- Geography major requirements: The Geography major offers two options: the (a) General Geography track and (b) an Applied Geography concentration. These two tracks are organized differently and have different goals and course emphases as follows:
 - A) The General Geography major is made up of upper division courses including 10 units of human geography, 6 units of physical geography, 6 units of regional geography, 6 units of methodology, and 8 units of electives for a total of 36 units.
 - B) The Applied Geography concentration is designed to provide geography courses that have practical applications to careers in computer mapping, city planning, public administration, and resource management. The Applied Geography concentration requires the same lower division prerequisites but has a core of upper division methodology courses. Required courses include GEOG 3700, GEOG 3751, GEOG 4301, and GEOG 4710. Other requirements include upper division courses including 6 units of other methodologies, 6 units of physical geography, 6 units of human geography, 3 units of regional geography, and 3 units of electives. This concentration also comprises 36 units.
- Non-Geography majors can obtain a minor in geography by completing 18 units as approved by a minor advisor. The Geography minor curriculum is handled primarily through advisement. It requires 18 units, at least 15 of which must be upper-division. Our curriculum structure requires the student to take at least one course from human geography, physical geography, and regional geography.

Related -----

Geography courses	13
BA geography worksheet (regular tract)	14
BA geography applied worksheet	15
Geography minor worksheet	16
General education curriculum	18

13

GEOGRAPHY COURSE DESCRIPTIONS (FROM CATALOGUE)

Lower Division

GEOG 2010 Introduction to Physical Geography (3 units). (Formerly *Introduction to Natural Environment*) Analysis of the distribution and character of major aspects of the natural environment, including weather, climate, landforms, soils, vegetation, and their significance and meaning to humans; humankind's impact on and use of these elements. Satisfies G.E. area D2. (CAN GEOG 2) (Fall, Spring)

GEOG 2020 Introduction to Cultural Geography (3 units). A broad based geographical survey of major components of human culture, including forms of livelihood, religion, and language. An introduction to themes in the study of folk culture, popular culture, and settlement patterns. Satisfies G.E. areas D2 and G. (CAN GEOG 4)

GEOG 2400 World Regional Geography I: Europe and Asia (3 units). (Formerly *World Regional Geography*) A regional analysis of Europe and Asia examining the spatial patterns of physical and human phenomena. Includes consideration of physical, cultural, historical, economic, and demographic characteristics. Satisfies G.E. area D2.

GEOG 2410 World Regional Geography II: Africa, Australia, and Latin America (3 units). A regional analysis of Africa, Australia, and Latin America, examining the spatial patterns of physical and human phenomena. Includes consideration of physical, cultural, historical, economic, and demographic characteristics. Satisfies G.E. area D2.

Upper Division

GEOG 3010 Cultural Geography (3 units). Study of wide ranging cultural topics including geopolitics, religion, ethnicity, folk and popular culture, population and migration, agriculture and cities. Examines cultural geographical processes of diffusion, adaptation, representation, and place. Satisfies G.E. area G. **Prerequisite:** Junior standing. (Fall)

GEOG 3020 Human Ecology (3 units). Study of environmental problems arising from human use of the Earth's resources. Topics include population dynamics, natural resource management, land use, coastal preservation, energy resources, and humankind's relationship to nature. Satisfies G.E. area F3. (Fall, Spring)

GEOG 3100 Climatology (3 units). The elements and controls of weather and climate; analysis of climatic regions of the world. **prerequisite:** GEOG 2010 or consent of instructor.

GEOG 3300 Geography of Economic Activities (3 units). Study of world economic activity from a geographic point of view; systematic analysis of agricultural, mining, and manufacturing patterns in the various regions of the world in relation to their natural and cultural settings. Considers locational determinants of human economic activities. **Prerequisite:** Junior standing or consent of instructor. (Normally offered alternate years)

GEOG 3330 Ethnic Geography (3 units)

Examines ethnic patterns, processes, identity, and ethnic heritage in North America. Patterns and processes of migration, settlement, and evolving ethnic landscapes in the Central Valley region are emphasized. Satisfies G.E. area G.

GEOG 3340 California Cultures and Environments (3 units)

Examines the natural, economic, political, and cultural processes that shape California's diverse physical and human environments. Topics include physiography, climate, hydrogeography, historic and contemporary settlement, and socio-economic issues. Satisfies G.E. area F3. (Fall)

GEOG 3350 Geography of the Great Central Valley (3 units)

Focuses on the character and complexity of the Great Central Valley by analyzing its physical environment, its people, and their relationship with both the land they occupy and the world beyond. Designed specifically for future teachers. (LIBS Integrative: Social Inquiry)

GEOG 3510 Geography of North America (3 units)

Surveys the natural and human factors responsible for present patterns of settlement, land use, and cultural systems in the U.S. and Canada. Topics include physiography, climate, settlement, religion, politics, economics, and cities. **Prerequisite:** Junior standing or consent of instructor. (Spring)

GEOG 3550 Geography of Europe (3 units)

The regional geography of Europe, with emphasis on present-day patterns. **Prerequisite:** Junior standing or consent of instructor. (Fall)

GEOG 3580 Cultural Ecology of Southeast Asian Peoples (4 units)

(Replaces GEOG 3590) Examines the cultures of Southeast Asia and their life styles emphasizing complex interrelations between cultures and their environments. Includes migration and acculturation issues related to Indochinese refugees. Satisfies G.E. area G.

GEOG 3650 Selected Topics in Regional Geography (1–3 units)

Regional emphasis or topic varies each semester. Course may be repeated. **Prerequisite:** Junior standing or consent of instructor.

GEOG 3700 Cartography (3 units)

Introduction to thematic cartography; fundamentals of cartographic portrayal including map design, compilation, computer drafting, and reproduction. Corequisite: GEOG 3702. **Prerequisite:** Three units of geography or consent of instructor. (Lecture, 2 hours; laboratory, 2 hours)

GEOG 3751 Introduction to Computer Applications in Geography (3 units)

Introduces computer systems and programs used in geographic research. Students will utilize systems and programs through the context of a class-wide geographic research problem. **Corequisite:** GEOG 3752. (Lecture, 2 hours; laboratory, 2 hours)

GEOG 3930 Historical Geography of the Central Mother Lode (1 unit)

An individually-paced, two-day field trip which involves following a trip guide to sites in and around the communities of Jamestown, Sonora, Columbia, Angels Camp, Murphys, Jackson, Volcano, Sutter Creek, Amador City, and Fiddletown. At each site, students are directed to play recorded lectures on topics ranging from early gold mines, mining methods, mining towns, local history, geography, and geology. (Fall, Spring)

GEOG 3940 Geography of the Sacramento-San Joaquin Delta (1 unit)

An individually-paced, two-day field trip in the Sacramento-San Joaquin Delta. Videos and a detailed route notebook will guide students in a study of Delta physical and cultural patterns.

GEOG 3950 Historical Geography of the Northern Mother Lode (1 unit)

An individually-paced, two-day field trip which involves following a trip guide to sites in and around the communities of Folsom, Coloma, Grass Valley, Nevada City, and North Bloomfield. At each site,

students are directed to play recorded lectures on topics ranging from early gold mines, mining methods, mining towns, local history, geography, and geology. (Fall, Spring)

GEOG 3960 The Yosemite Region (1 unit).

Individually paced field trip of Yosemite National Park and its setting. Topics covered include geology, park history, environmental concerns, and park management. Course involves following an itinerary using a guide book, maps, and taped discussions which are played in the field at designated locations. Takes two to three days depending on student travel plans. Student arranges own departure/return dates and own transportation.

GEOG 4000 Current Trends in Geography (1-2 units).

A symposium on geography featuring speakers on their special areas of research, including current theories and research approaches in geography. Topics differ each term. May be repeated for no more than 4 units of credit towards the major. **Prerequisite:** One lower-division geography class or consent of instructor.

GEOG 4050 Restorative Human Ecology (3 units).

A study of current approaches to restore human environmental balance for sustainability and environmental, community, and human health. Includes examination of the ethnoecology of several indigenous cultures. Satisfies G.E. areas F3 and G. One of three cluster courses in the G.E. Summit Program (Waking up to Nature: Ethics, Ecology, and Restoration Practices). **Prerequisite:** Consent of Summit Program Coordinator.

GEOG 4070 Agricultural Geography (4 units).

(Formerly GEOG 3070) Examines a variety of agricultural systems in the world from an agro-ecological approach. The natural resources and cultural factors which interact to shape and change agricultural systems are studied in detail. **Prerequisite:** One course in physical geography.

GEOG 4120 Geomorphology (3 units).

(Formerly GEOG 3120) Study and interpretation of the Earth's natural landforms; their distribution and the processes acting on them; includes consideration of landform evolution under varied climatic regimes. **Prerequisite:** GEOG 2010 or equivalent course in physical geography or consent of instructor.

GEOG 4210 Geographic Problems in the Developing World (3 units).

Analysis of natural and cultural conditions pertinent to development. Consideration of the role of geography in solution of development problems. **Prerequisite:** An introductory course in geography.

GEOG 4250 The Ethnoecology of Southeast Asia (4 units).

(Same as ANTH 4250) Drawing on case studies from Island and Mainland Southeast Asia (including southern China), this course explores the long history of human-environmental interaction in the region. Examines the causes of stress and instability in that interaction and the attempts to restore viable relationships and systems. **Prerequisite:** Senior standing or consent of instructor.

GEOG 4301 Permaculture Applications in Diverse Environments (3 units).

(Formerly *Geography and Environmental Planning*) Examines permaculture approaches in humid tropics/subtropics, arid and semi-arid regions, mountain/cold climates, and urban areas. **Prerequisite:** Introductory physical geography course or consent of instructor.

GEOG 4350 Urban Geography (4 units).

Study of the spatial aspects of the city. Emphasis on the relationship of cities to each other and to the countryside, as well as on the internal structure and spatial dynamics of urban centers. Special consideration given to problems of the urban environment including urban sprawl, water and recreational needs, and controls of land use. Field trips may be required. **Prerequisite:** Junior standing or consent of instructor. (Spring)

GEOG 4610 Historical Geography of the United States (3 units).

A study of the evolution of cultural landscapes in the United States. Emphasis on initial and sequential settlement patterns, routes of diffusion and migration, and use of resources in light of cultural traditions. Comparative analysis of regional differences in material folk culture. **Prerequisite:** Junior standing or consent of instructor.

GEOG 4650 Seminar in Geography (1–3 units).

Topic or emphasis varies each semester; course may be repeated. **Prerequisite:** Six units of geography or consent of instructor.

GEOG 4700 Geographical Processes in Arid Landscapes: Death Valley (4 units).

Using field techniques in geography, the course analyzes geomorphic processes, climate characteristics, vegetation patterns and adaptations, and human impacts in an arid environment. Course is taught in Death Valley and is offered only winter term. **Corequisite:** GEOG 4703.

Prerequisites: A course in physical geography and consent of instructor. (Lecture, 1 hour; activity, 6 hours)

GEOG 4710 Field Methods (WP) (3 units).

Methods of field observation; techniques of data collection and analysis; field work and report writing required. Satisfies upper division writing proficiency requirement. **Corequisite:** GEOG 4713.

prerequisites: Completion of the Writing Proficiency Screening Test with a passing score. Six units in geography or consent of instructor. (Lecture, 2 hours; activity, 2 hours) (Fall)

GEOG 4720 Local Field Excursions (1 unit).

Provides students with directed field experiences, involving travel to and study of areas of special geographic significance such as Yosemite, Point Reyes, Mono Lake, and others. May be repeated to various destinations. **Prerequisite:** Consent of instructor.

GEOG 4730 Computer Applications in Geography (1-3 units).

A tutorial course for self-motivated students familiar with computer programs. Students will learn mapping techniques and geographic information systems from available software. **Prerequisites:** Consent of instructor and knowledge of cartography.

GEOG 4750 Geographic Information Systems (3 units).

The use of computers for input, storage, representation, analysis, and retrieval of spatial data for cartographic purposes; GIS as a tool in information management and decision making. **Corequisite:** GEOG 4752. **Prerequisites:** Consent of instructor and computer experience. (Lecture, 2 hours; laboratory, 2 hours)

GEOG 4800 Survey of Geographic Thought and Literature (3 units).

Survey of the history and philosophy of geography, its place among the sciences and social sciences, and the major contributors to the development of modern scientific geography. **Prerequisite:** Consent of instructor.

GEOG 4900 Directed Field Research (1–5 units).

Field research conducted in any subdiscipline of geography under the direction of a specific faculty member. May be repeated for a total of 6 units. **Prerequisites:** Junior standing and consent of instructor.

GEOG 4910 Cooperative Education (2–4 units).

Provides an opportunity to acquire relevant, practical experience in supervised paid employment within the discipline. Students serve in private or public sector positions under the supervision of the employer and Department Co-op Coordinator. May be repeated for a total of 6 units. **Prerequisites:** Sophomore standing and consent of departmental coordinator. (Fall, Winter, Spring).

GEOG 4930 Planning Issues (1–2 units).

On an individual basis, students will attend a selection of urban and/or county planning meetings during one term and develop reports related to issues discussed. Must provide own transportation.

Prerequisite: Consent of instructor.

GEOG 4940 Internship in Geography (1–6 units).

Designed for students who are serving as interns in public or private agencies. Students serve internship as arranged between the agency and the department. **Prerequisites:** Nine upper division units in geography and consent of instructor.

GEOG 4950 Selected Topics in Geography (Topics to be specified in Class Schedule) (1-5 units).

Topics vary each term, thus different topics may be taken for credit. **Prerequisite:** Consent of instructor.

GEOG 4980 Individual Study (1–4 units).

For students capable of independent work and in need of advanced and specialized study. May be repeated for a total of 6 units. **Prerequisite:** Consent of instructor.

GEOG 4990 Senior Thesis (3 units).

Senior thesis (a research topic to be agreed upon by the student and major professor). Geographic research and writing incorporating primary sources of data and geographic methods. **Prerequisites:** Senior standing, advanced course work in geography, and consent of instructor.

Postbaccalaureate

GEOG 5250 The Ethnoecology of Southeast Asia (4 units).

(Same as ANTH 5250) Drawing on case studies from Island and Mainland Southeast Asia (including southern China) this course explores the long history of human-environmental interaction in the region. We examine the causes of stress and instability in that interaction and the attempts to restore viable relationships and systems. **Prerequisite:** Graduate standing or consent of instructor.

GEOG 5800 Seminar in the Development of Geographic Thought (3 units).

Seminar in the history and philosophy of geography, its place among the sciences and humanities, and the major contributors to the development of modern scientific geography. **Prerequisites:** Graduate standing and consent of instructor.

GEOG 5850 Seminar in Graduate Research (2 units).

Considers the techniques used, problems encountered, and results of the current research of graduate students. May be repeated once for credit. **Prerequisites:** Graduate standing and consent of instructor.

GEOG 5900 Directed Field Research (1–5 units).

Field research conducted in a subdiscipline of geography under the direction of a specific faculty member. May be repeated for a total of 6 units. **Prerequisite:** Consent of instructor. Available only for postbaccalaureate credit.

GEOG 5940 Internship in Geography (1-6 units).

Designed for postbaccalaureate or graduate students who are serving as interns in public or private agencies. Students serve internship as arranged between the agency and the department.

Prerequisites: Graduate standing and consent of instructor.

GEOG 5950 Selected Topics in Geography (1-5 units). (Topics to be specified in Schedule of Classes.)

Innovative course of study in seminar format. Topics vary. Different topics may be taken for credit. Available only for postbaccalaureate credit. **Prerequisite:** Consent of instructor.

GEOG 5980 Individual Study (1–4 units).

Individual study for qualified postbaccalaureate students in need of advanced and specialized study. May be repeated for a total of 6 units. **Prerequisite:** Consent of instructor.

GEOG 5990 Thesis (3–6 units).

Thesis research. May be repeated for a total of 6 units. **Prerequisite:** Consent of graduate adviser.

14

BA GEOGRAPHY WORKSHEET (regular tract)

The Geography curriculum requires all students to take courses in each of the sub fields of the discipline. A total of 36 units distributed in one of two program options outlined below is adequate for students to achieve our objectives, and the major is comparable in structure to geography programs at universities across the nation. These courses not only provide a broad background in geography, they expose the student to the classroom, the field, and laboratory settings for instruction.

Geography major requirements: The Geography major offers two options: the (a) General Geography track and (b) an Applied Geography concentration. These two tracks are organized differently and have different goals and course emphases as follows:

- A) The General Geography major is made up of upper division courses including 10 units of human geography, 6 units of physical geography, 6 units of regional geography, 6 units of methodology, and 8 units of electives for a total of 36 units.
- B) The Applied Geography concentration is designed to provide geography courses that have practical applications to careers in computer mapping, city planning, public administration, and resource management. The Applied Geography concentration requires the same lower division prerequisites but has a core of upper division methodology courses. Required courses include GEOG 3700, GEOG 3751, GEOG 4301, and GEOG 4710. Other requirements include upper division courses including 6 units of other methodologies, 6 units of physical geography, 6 units of human geography, 3 units of regional geography, and 3 units of electives. This concentration also comprises 36 units.

PREREQUISITES TO THE MAJOR:	UNITS	GRADE	SEMESTER	NOTE
1. GEOG 2010 Intro to Physical Geography	_____	_____	_____	_____
2. Complete one of the following:				
GEOG 2020 Intro to Cultural Geography	_____	_____	_____	_____
GEOG 2400 World Regional Geography I	_____	_____	_____	_____
GEOG 2410 World Regional Geography II	_____	_____	_____	_____

UPPER DIVISION REQUIREMENTS

Complete the major of not less than 36 upper-division units as approved by the major advisor. Four units of CR-graded course work in courses graded exclusively CR/NC may apply toward the major, as follows:

A. Topical Human Geography (10 units minimum)

- 1. GEOG 3010 Cultural Geography, 3 units _____

Note: If Cultural Geography is taken at the lower-division level, GEOG 3020 (Human Ecology) should be taken to fulfill I.a.i.

UNITS GRADE SEMESTER NOTE

2. Complete **two** of the following courses:

GEOG 3020 Human Ecology, 3 units	_____	_____	_____	_____
Note: If Restorative Human Ecology (Geog 4050) is taken, this course should not be taken to fulfill requirements.				
GEOG 3330 Ethnic Geography, 3 units	_____	_____	_____	_____
GEOG 3580 Cultural Geog of SEA Peoples, 4 units	_____	_____	_____	_____
GEOG 4050 Restorative Human Ecology, 3 units	_____	_____	_____	_____
Note: If Human Ecology (Geog 3020) is taken, this course should not be taken to fulfill requirements.				
GEOG 4070 Agricultural Geography, 4 units	_____	_____	_____	_____
GEOG 4210 Geog Problems of the Dev World, 3 units	_____	_____	_____	_____
GEOG 4301 Permaculture Applications, 3 units	_____	_____	_____	_____
GEOG 4350 Urban Geography, 4 units	_____	_____	_____	_____
GEOG 4610 Historical Geography of the U.S., 4 units	_____	_____	_____	_____
Other GEOG_____	_____	_____	_____	_____

B. Topical Physical Geography (6 units)

GEOG 3100 Climatology, 3 units	_____	_____	_____	_____
GEOG 4120 Geomorphology, 3 units	_____	_____	_____	_____

C. Regional Geography (6 units minimum)

Note: With prior approval, certain other regional geography courses may be substituted for the courses listed below. See your advisor.

GEOG 3340 Calif Cultures and Environ, 3 units	_____	_____	_____	_____
GEOG 3350 Geog of Great Central Valley, 3 units	_____	_____	_____	_____
GEOG 3510 Geog of North America, 3 units	_____	_____	_____	_____
GEOG 3550 Geography of Europe, 3 units	_____	_____	_____	_____
GEOG 4250 Ethnoecology of SEAsia, 4 units	_____	_____	_____	_____

D. Methodology (6 units minimum)

Complete two of the following courses:

GEOG 3700 Cartography, 3 units	_____	_____	_____	_____
GEOG 3751 Intro Computer Apps in Geog, 3 units	_____	_____	_____	_____

	UNITS	GRADE	SEMESTER	NOTE
GEOG 4700 Death Valley Landscapes, 4 units	_____	_____	_____	_____
GEOG 4710 Field Methods (WP), 3 units	_____	_____	_____	_____
GEOG 4730 Computer Apps in Geog, 1-3 units	_____	_____	_____	_____
GEOG 4750 Geographic Info Systems, 3 units	_____	_____	_____	_____

E. Upper-Division Electives: Select electives to complete a total of at least 36 units, including those upper-division units listed above.

Course: GEOG_____	_____	_____	_____	_____
Course: GEOG_____	_____	_____	_____	_____
Course: GEOG_____	_____	_____	_____	_____
Course: GEOG_____	_____	_____	_____	_____

Related -----

BA GEOGRAPHY WITH APPLIED CONCENTRATION WORKSHEET

The Applied Geography concentration is designed to provide a core of geography courses, which have practical applications to careers in computer mapping, city planning, public administration, and resource management. Courses in this track are as follows:

The Applied Geography concentration requires the same lower division prerequisites but has a core of upper division methodology courses as follows:

PREREQUISITES TO THE MAJOR:	UNITS	GRADE	SEMESTER	NOTE
1. GEOG 2010 Intro to Physical Geography	_____	_____	_____	_____
2. Complete one of the following:				
GEOG 2020 Intro to Cultural Geography	_____	_____	_____	_____
GEOG 2400 World Regional Geography I	_____	_____	_____	_____
GEOG 2410 World Regional Geography II	_____	_____	_____	_____

UPPER DIVISION REQUIREMENTS

Complete the major of not less than 36 upper-division units as approved by the major advisor. Four units of CR-graded course work in courses graded exclusively CR/NC may apply toward the major, as follows:

A. Complete the following required methodology courses (12_units):				
GEOG 3700 Cartography, 3 units	_____	_____	_____	_____
GEOG 3751 Intro to Computer Apps, 3 units	_____	_____	_____	_____
GEOG 4301 Permaculture Apps, 3_units	_____	_____	_____	_____
GEOG 4710 Field Methods (WP), 3 units	_____	_____	_____	_____
B. Complete a minimum of 6 units from the following applied courses:				
GEOG 4700 Death Valley, 4 units	_____	_____	_____	_____
GEOG 4730 Computer Apps in Geog, 1-3_units	_____	_____	_____	_____
GEOG 4750 Geographic Info Systems, 3 units	_____	_____	_____	_____
GEOG 4930 Planning Issues, 1-2 units	_____	_____	_____	_____
C. Topical Human Geography 6 units minimum)				
GEOG 3010 Cultural Geography, 3 units	_____	_____	_____	_____
Note: If Cultural Geography is taken at the lower-division level, GEOG 3020 (Human Ecology) should be taken to fulfill I.a.i.				

UNITS GRADE SEMESTER NOTE

GEOG 3020 Human Ecology, 3 units _____
 Note: If Restorative Human Ecology (Geog 4050) is taken, this course should not be taken to fulfill requirements.

GEOG 3330 Ethnic Geography, 3 units _____

GEOG 3580 Cultural Geog of SEA Peoples, 4 units _____

GEOG 4050 Restorative Human Ecology, 3 units _____
 Note: If Human Ecology (Geog 3020) is taken, this course should not be taken to fulfill requirements.

GEOG 4070 Agricultural Geography, 4 units _____

GEOG 4210 Geog Problems Dev World, 3 units _____

GEOG 4301 Permaculture Applications, 3 units _____

GEOG 4350 Urban Geography, 4 units _____

GEOG 4610 Historical Geog of the U.S., 4 units _____

Other GEOG _____

D. Topical Physical Geography (6 units) Complete the following two courses:

GEOG 3100 Climatology, 3 units _____

GEOG 4120 Geomorphology, 3 units _____

E. Regional Geography (3 units minimum)

GEOG 3340 Calif Cultures and Environ, 3 units _____

GEOG 3350 Geog of Great Central Valley, 3 units _____

GEOG 3510 Geog of North America, 3 units _____

GEOG 3550 Geography of Europe, 3 units _____

GEOG 4250 Ethnoecology of SEAsia, 4 units _____

F. Upper-Division Electives: Select electives to complete a total of at least 36 units, including those upper-division units listed above.

Course: GEOG _____

Course: GEOG _____

Related -----

GEOGRAPHY MINOR WORKSHEET

Students can obtain a minor in Geography by completing **18 units as approved by the minor advisor**. The Geography minor curriculum is handled primarily through advisement. It requires 18 units, at least 15 of which must be upper-division. Students must take at least one course each from human geography, physical geography and regional geography.

	UNITS	GRADE	SEMESTER	NOTE
LOWER DIVISION				
GEOG 2010 Intro to Physical Geography	_____	_____	_____	_____
GEOG 2020 Intro to Cultural Geography	_____	_____	_____	_____
GEOG 2400 World Regional Geography I	_____	_____	_____	_____
GEOG 2410 World Regional Geography II	_____	_____	_____	_____
UPPER DIVISION				
A. Topical Human Geography (3 units minimum)				
GEOG 3010 Cultural Geography, 3 units	_____	_____	_____	_____
GEOG 3020 Human Ecology, 3 units or GEOG 4050	_____	_____	_____	_____
GEOG 3330 Ethnic Geography, 3 units	_____	_____	_____	_____
GEOG 3580 Cultural Geog of SEA Peoples, 4 units	_____	_____	_____	_____
GEOG 4070 Agricultural Geography, 4 units	_____	_____	_____	_____
GEOG 4210 Geog Problems of the Dev World, 3 units	_____	_____	_____	_____
GEOG 4301 Permaculture Applications, 3 units	_____	_____	_____	_____
GEOG 4350 Urban Geography, 4 units	_____	_____	_____	_____
GEOG 4610 Historical Geography of the U.S., 3 units	_____	_____	_____	_____
Other GEOG _____	_____	_____	_____	_____
B. Topical Physical Geography (3 units minimum)				
GEOG 3100 Climatology, 3 units	_____	_____	_____	_____
GEOG 4120 Geomorphology, 3 units	_____	_____	_____	_____
C. Regional Geography (3 units minimum)				
GEOG 3340 Calif Cultures and Environ, 3 units	_____	_____	_____	_____
GEOG 3350 Geog of Great Central Valley, 3 units	_____	_____	_____	_____
GEOG 3510 Geog of North America, 3 units	_____	_____	_____	_____
GEOG 3550 Geography of Europe, 3 units	_____	_____	_____	_____
GEOG 4250 Ethnoecology of SEAsia, 4 units	_____	_____	_____	_____
Other				
GEOG 3700 Cartography, 3 units	_____	_____	_____	_____
GEOG 3751 Intro Computer Apps in Geog, 3 units	_____	_____	_____	_____
GEOG 4700 Death Valley Landscapes, 4 units	_____	_____	_____	_____
GEOG 4710 Field Methods (WP), 3 units	_____	_____	_____	_____
GEOG 4730 Computer Apps in Geog, 1-3 units	_____	_____	_____	_____
GEOG 4750 Geographic Info Systems, 3 units	_____	_____	_____	_____
Course: GEOG _____	_____	_____	_____	_____

Related -----

17

LIBERAL STUDIES WITH GEOGRAPHY CONCENTRATION WORKSHEET

Requirements (21 units)

1. Complete two of the following courses (6 units):
 - GEOG 2010 Introduction to the Natural Environment, 3 units
 - GEOG 2400 World Regional Geography I: Europe and Asia, 3 units
 - GEOG 2410 World Regional Geography II: Africa, Australia, and Latin America, 3 units
2. Complete the following courses (6 units):
 - GEOG 3010 Cultural Geography, 3 units
 - GEOG 3020 Human Ecology, 3 units
3. Complete the following regional course (3 units):
 - GEOG 3510 Geography of North America, 3 units
4. Complete the required upper division inquiry course (3 units):
 - GEOG 3350 Geography of the Great Central Valley, 3 units
5. Complete additional units in geography (3 units), based on interest.
 - GEOG 3340 California Cultures and Environments, 3 units
 - GEOG 3550 Geography of Europe, 3 units
 - GEOG 3580 Cultural Ecology of Southeast Asian Peoples, 4 units
 - GEOG 3700/3702 Cartography, 3 units
 - GEOG 3751/3752 Introduction to Computer Applications in Geography, 3 units
 - GEOG 4070 Agricultural Geography, 4 units
 - GEOG 4120 Geomorphology, 3 units
 - GEOG 4210 Geographic Problems in the Developing World, 3 units
 - GEOG 4250/5250 Ethnoecology of Southeast Asia, 4 units
 - GEOG 4301 Permaculture Applications in Diverse Environments, 3 units
 - GEOG 4350 Urban Geography, 4 units
 - GEOG 4610 Historical Geography of the United States, 3 units
 - GEOG 4700/4703 Geographical Processes in Arid Landscapes: Death Valley, 4 units
 - GEOG 4750/4752 Geographic Information Systems, 3 units
 - GEOG 4800 Survey of Geographic Thought and Literature, 3 units

SOCIAL SCIENCES WITH GEOGRAPHY CONCENTRATION WORKSHEET

Students must take at least one course from topical human geography and one course from regional geography. Only one unit of the self-guided field trip courses, GEOG 3930, 3940, 3950, or 3960 may be applied to the Social Sciences Major.

- a. Prerequisite: Complete one of the following:
 - GEOG 2020 Introduction to Cultural Geography, 3 units
 - GEOG 2400 World Regional Geography I, 3 units
 - GEOG 2410 World Regional Geography II, 3 units
- b. Select nine to twelve upper-division units from the following:
 - Topical human geography
 - GEOG 3010, 3020, 3300, 4070, 4210, 4350, 4650, 4800, 4840
 - Regional geography
 - GEOG 3340, 3350, 3510, 3550, 3570, 3590, 3650, 4210, 4610
 - Methodology geography
 - GEOG 3700, 4700, 4710 (WP), 4730, 4840

GENERAL EDUCATION WORKSHEET

A. Communication Skills (Area A.1, 2 and 3 must be completed before the junior year. Transfer students who have not completed Area A must do so during their first year in residence.) (9 units minimum)

UNITS GRADE SEMESTER WHERE?

1. Oral Communication Requirement

COMM 2000 Public Speaking, 3 units, **or** _____
 COMM 2005 Honors Communication Seminar, 3 units, **or** _____
 COMM 2110 Group Discussion Processes, 3 units _____

2. Written Communication Requirement

ENGL 1001 First-Year Composition, 3 units, **or** _____
 ENGL 1002 First-Year Composition (Computer Assisted Instruction), 4 units, **or** _____
 ENGL 1005 Honors Composition, 3 units _____
 (All require an EPT score of 149 or above prior to enrollment.)

3. One course selected from the following:

COMM 2300 Argumentation and Critical Thinking, 3 units **or** _____
 ENGL 2000 Critical Inquiry, 3 units, **or** _____
 PHIL 2000 Philosophical Inquiry, 3 units, **or** _____
 PHIL 2005 Honors Critical Thinking, 3 units, **or** _____
 PHIL 2100 Logic, 3 units _____

B. Natural Sciences and Mathematics (9 units minimum)

*Note: Complete at least one course from each of the 3 groups listed below. This **must** include a laboratory course from either group 1 or 2.*

1. Physical Sciences Requirement

ASTR 2100 Descriptive Astronomy, 3 units, **and** ASTR 2112 Optional lab, 1 unit _____
 CHEM 1000 Chemistry in the Modern World, 3 units, **and** CHEM 1002 Optional lab, 1 unit _____
 CHEM 1100 Principles of Chemistry I, 5 units (includes lab) _____
 CHEM 1110 Principles of Chemistry II, 5 units (includes lab) _____
 CHEM 2400 Science of Winemaking, 4 units (no lab credit) _____
 CHEM 2500 Chemistry of Photography, 4 units (includes lab) _____
 CHEM 2600 Consumer Chemistry, 4 units (includes lab) _____
 GEOL 2001 Regional Geology of California, 3 units (includes lab) _____
 GEOL 2100 Principles of Geology, 3 units (no lab credit) _____
 GEOL 2102 Principles of Geology Lab, 1 unit _____
 GEOL 2200 Historical Geology, 4 units (includes lab) _____
 GEOL 2400 Introduction to Earth Science, 3 units (no lab credit) _____
 PHSC 1300 Environmental Pollution, 3 units (no lab credit) _____
 PHSC 2100 Atmosphere, Weather, and Climate, 3 units (no lab credit) _____
 PHYS 1500 Energy and Matter, 3 units, **and** PHYS 1502 Optional lab, 1 unit _____
 PHYS 2100 Basic Physics I, 5 units (includes lab) _____
 PHYS 2110 Basic Physics II, 5 units (includes lab) _____
 PHYS 2250 General Physics I, 4 units, **and** PHYS 2252 Optional lab, 1 unit _____

2. Biological Sciences

BIOL 1010 Principles of Biology, 3 units (no lab credit) _____

BIOL 1020 World of Biology Laboratory, 1 unit, taken concurrently with BIOL 1010
 BIOL 2310 Human Genetics, 3 units (no lab credit)
 BIOL 2650 Environmental Biology, 3 units (no lab credit)
 BOTY 1050 Introduction to Botany, 4 units (includes lab)
 ZOOL 1050 Introduction to Zoology, 4 units (includes lab)

3. Mathematics (Area B3 must be completed before the Junior year; transfer students who have not completed Area B3 must do so during their first year in residence. Requirements may be partially satisfied by acceptable scores on a CLEP Subject Examination or a CSU mathematics test (See Appendix N.) See Appendix K for Learning Disabled Student waiver.)

MATH 1000 Excursions into Mathematics, 3 units _____
 MATH 1030 Elementary Foundations of Mathematics I, 3 units _____
 MATH 1070 College Algebra, 3 units _____
 MATH 1080 Trigonometry, 3 units _____
 MATH 1100 Precalculus, 4 units _____
 MATH 1410 Calculus I, 4 units _____
 MATH 1500 Finite Mathematics, 3 units _____
 MATH 1600 Statistics, 4 units _____
 MATH 1610 Statistics for Decision Making, 3 units _____
 MATH 1910 Calculus with Applications I, 3 units _____

Note: All the above MATH courses require an ELM score of 50 or above prior to enrollment.

C. Humanities Requirement (Requirements may be satisfied partially by acceptable scores on the CLEP Humanities General Examination.) (9 units minimum)

Note: Include at least 3 units from group 1, and 3 units from group 2, below.

1. Arts

ART 1000 Introduction to Studio Art, 3 units _____
 ART 1100 Visual Principles, Two-Dimensional, 3 units _____
 ART 1200 Visual Principles, Three-Dimensional, 3 units _____
 ART 1340 Introduction to Ceramics, 3 units _____
 ART 2515 Art History Survey-Ancient, 3 units _____
 ART 2520 Art History Survey-Modern, 3 units _____
 ART 2525 Art History Survey-Non-Western, 3 units (G) _____
 ART 2530 Art Appreciation, 3 units _____
 FA 1000 Introduction to the Fine Arts, 3 units _____
 FA 1010 Fine Arts Practicum: Introduction to Visual Art, 3 units _____
 FA 1020 Fine Arts Practicum: Introduction to the Theatre, 3 units _____
 FA 1030 Fine Arts Practicum: Introduction to Music Skills, 3 units _____
 MUS 1000 Introduction to Music, 3 units _____
 MUS 1190 Music Fundamentals, 3 units _____
 MUS 2000 Music of World Cultures, 3 units (G) _____
 MUS 2400 Orchestra, 1 unit _____
 MUS 2410 Concert Chorale, 1 unit _____
 MUS 2430 University Chamber Singers, 1 unit _____
 MUS 2440 Wind Ensemble, 1 unit _____
 THEA 1010 Introduction to Theatre, 3 units _____
 THEA 1110 Playgoing, 3 units _____
 THEA 1500 Acting for Non-Theatre Majors, 3 units _____
 THEA 1510 Dance for the Stage, 3 units _____
 THEA 2300 Theatre Workshop I, 3 units _____

2. Literature/Philosophy

ENGL 1010 Introduction to Literature, 3 units _____
 HUM 2000 Introduction to the Humanities, 3 units _____
 PHIL 1010 Introduction to Philosophy, 3 units _____
 PHIL 2200 Ancient Philosophy, 3 units _____

PHIL 2230 Modern Philosophy, 3 units
PHIL 2400 Contemporary Moral Issues, 3 units
PHIL 2700 Introduction to Political Philosophy, 3 units

3. Foreign Language

- a.** Most lower-division language or literature course taught in a foreign language.
b. ESL 1000 Beginning English and Grammar for ESL Students, 4 units
ESL 1005 Intermediate English and Grammar for ESL Students, 4 units
ESL 2000 English Grammar and Composition for Foreign Students, 3 units

D. Social, Economic, and Political Institutions and Human Behavior (12 units minimum)

1. United States History and Constitution/California State and Local Government:

Students may satisfy subject requirements in United States History and Constitution and California State and Local Government by passing departmental examinations in these fields. The *California Code of Regulations*, Title 5, Section 40404, requires "...appropriate courses in the Constitution of the United States, and in American history, including the study of American institutions and ideals, and of the principles of state and local government established under the Constitution of this State...."

Completion of one course under (a) and the course under (b) satisfies these requirements.

- a.** One of the following United States history courses (which are not applicable to the upper-division General Education requirements):

HIST 2600 Problems in U.S. History, 3 units
HIST 3610 Colonial North America, 3 units
HIST 3620 Early National United States, 3 units
HIST 3630 United States After the Civil War, 3 units
HIST 3640 Contemporary United States, 3 units

- b.** One course covering United States Constitution and California State and local government:
PSCI 1201 American Government, 3 units

2. A minimum of one course from each group is required (Requirements may be satisfied partially by acceptable scores on the CLEP Social Sciences General Examination.)

a. Human Institutions : Structures and Processes

COMM 2011 Introduction to Communication Studies, 3 units
COMM 2200 Introduction to Mass Media, 3 units
ECON 2500 Principles of Macroeconomics, 3 units
ECON 2510 Principles of Microeconomics, 3 units
HIST 1010 World Civilizations I, 3 units (G)
HIST 1020 World Civilizations II, 3 units (G)
PSCI 2000 Introduction to Political Science, 3 units
PSCI 2030 Global Politics, 3 units (G)
SOCL 1010 Introduction to Sociology, 3 units

b. Society and Culture

ANTH 2060 Introduction to Cultural Anthropology, 3 units (G)
ANTH 2080 Introduction to Physical Anthropology, 3 units
ANTH 2090 Introduction to Archaeology, 3 units
COGS 2100 Introduction to Cognitive Studies, 3 units
CJ 2250 Introduction to Criminal Justice, 3 units
ETHS 2000 Contemporary African American Studies, 3 units
ETHS 2100 Contemporary Chicano Studies, 3 units
ETHS 2200 Contemporary Asian American Studies, 3 units
GEND 2020 Introduction to Women's Studies, 3 units
GEOG 2010 Introduction to Physical Geography, 3 units

GEOG 2020 Introduction to Cultural Geography, 3 units (G)
 GEOG 2400 World Regional Geography I: Europe and Asia, 3 units
 GEOG 2410 World Regional Geography II: Africa, Australia, and Latin America, 3 units
 NURS 1040 Human Development Over the Life Span, 3 units
 PSYC 2010 Introduction to Psychology, 3 units

E. Individual Resources for Modern Living (3 units minimum)

Note: Include one course from each group of courses:

- 1.** CS 2000 Effective Computing, 3 units _____
 (Students may NOT use both CS 2000 and CS 4000 to satisfy GE requirements.)
 CIS 2000 Introduction to Business Computer Systems, 3 units
 GEND 2500 Women's Development and Lifestyle Choices, 3 units
 HLTH 1000 Health in Today's Society, 3 units
 HONS 3500 Information/Research/Analysis, 3 units
 NURS 2040 Better Health with Self-Care, 2 units
 NURS 2042 Better Health with Self-Care Activity, 1 unit
 PSYC 1000 Sexual Behavior, 3 units
 PSYC 2030 Psychology of Adjustment, 3 units
 SOCL 2000 Intergenerational Experiences and Life Course Developments, 3 units

- 2. PHED 1010–1999 Physical Education Activities,** _____
1 unit (Students age 25 years or older at entry to CSU Stanislaus will not be held for this requirement.)

F. Upper-Division General Education Requirements (9 units minimum)

Each student is to complete a minimum of 9 units of upper division level General Education course work. These courses may be taken no earlier than the term in which upper-division status (completion of 60 semester units) is attained. Students will not be given upper-division General Education credit for course work in the discipline(s) of their major or concentration. The distribution of the 9 semester units must include 3 units from each of the three following areas:

- 1. Natural Science and Mathematics** _____
- a. Biology**
 BIOL 3000 Frontiers in Biology, 3 units
 BIOL 3020 Introduction to Evolution, 3 units
- b. Chemistry**
 CHEM 3070 The Chemicals in Your Life, 3 units
 CHEM 3100 Environmental Chemistry, 3 units
- c. Computer Science**
 CS 40006 Personal Computing, 3 units
- d. Mathematics**
 MATH 3030 Mathematics for Elementary and Middle School Teachers, 3 units
 MATH 3350 Applied Mathematical Models, 3 units
- e. Other Natural Sciences**
 NSCI 3000 Science for Self-Sufficiency, 3 units
- f. Physics and Physical Sciences**
 ASTR 3000 Contemporary Astronomy, 3 units
 GEOL 3000 Physical and Environmental Geology, 4 units
 GEOL 3500 Earthquakes and Volcanoes, 3 units
 PHSC 3500 Solar and Other Alternative Energies, 3 units
 PHYS 3080 How Things Work, 3 units
 PHYS 3520 Modern Physics and Quantum Mechanics, 3 units

- 2. Humanities** _____
- a. Art**
 ART 4545 Modern Art 1870–1945, 3 units
 ART 4555 American Art, 3 units

b. English

ENGL 3920 Masterpieces of World Literature, 3 units
ENGL 3940 Multicultural American Literature, 3 units (G)
HUM 3000 Exploration in Humanities, 3 units
HUM 4750 Perceptions of Culture, 3 units

c. Foreign Languages

FREN 3930 French Literature in Translation, 3 units
PORT 3930 Portuguese and Brazilian Literatures in Translation, 3 units
SPAN 3930 Spanish/Latin American Literature in Translation, 3 units
SPAN 3970 Contemporary Latin American Prose in Translation, 3 units

d. Music

MUS 3400 American Music, 3 units
MUS 3410 History of Jazz, 3 units

e. Philosophy

PHIL 3010 Classics of Western Philosophy, 3 units
PHIL 3050 Existentialism, 3 units
PHIL 4000 Philosophy Through Literature, 3 units
PHIL 4401 Professional Ethics, 3 units
PHIL 4450 Eastern Philosophy: Concepts, Methods, and Context, 3 units

f. Theatre

THEA 3020 Children's Theatre, 3 units
THEA 3170 Real World Theatre: Comic Improvisation, 3 units (G)
THEA 4550 American Theatre, 3 units (G)

3. Social, Economic, and Political Institutions and Human Behavior

a. Agricultural Studies

AGST 3000 Agriculture, Environment and Society, 3 units

b. Anthropology

ANTH 3000 Anthropology and Global Issues, 3 units (G)
ANTH 3010 The Great Discoveries, 3 units

c. Business Administration (Not for Business majors)

ACC 3005 Personal Financial Planning, 3 units
CIS 3780 Management Information Systems and Microcomputers, 3 units
FIN 3210 Investment Management, 3 units

d. Cognitive Studies

COGS 3100 Communication Networks, 3 units
COGS 4100 Philosophical Aspects of Cognitive Science, 3 units

e. Communication Studies

COMM 3100 Advanced Interpersonal Communication, 3 units
COMM 4220 Technology and Communication, 3 units
JOUR 3030 Freedom of Speech and Press: Contemporary Issues, 3 units
JOUR 3040 History of Journalism, 3 units

f. Economics

ECON 3100 Economic History of the United States, 3 units
ECON 4500 Economics of Investment, 4 units

g. Ethnic Studies

ETHS 4200 The Minority Experience, 3 units (G)
GENE 4750 Comparative World Women: Perceptions of Gender, 3 units (G)

h. Gender Studies

GENE 3550 Society and Gender, 3 units
GENE 4530 Gender and Sexuality in Literature, 3 units (G)
GENE 4750 Comparative World Women: Perceptions of Gender, 3 units (G)

i. Geography

GEOG 3020 Human Ecology, 3 units
GEOG 3340 California Cultures and Environments, 3 units

j. Health

HLTH 4300 Family Health, 3 units (G)

NURS 3040 Women's Health, 3 units

k. History

HIST 3090 Contemporary World History, 3 units (G)

HIST 3400 The Great Teachings, 3 units (G)

HIST 4750 Comparative World Women: Perceptions of Gender, 3 units (G)

l. Multidisciplinary

MDIS 4400 Politics of the Environment, 3 units

m. Nursing

NURS 3040 Women's Health, 3 units

n. Politics and Public Administration

PSCI 3055 Marx on the Human Condition, 3 units

PSCI 3225 Civil Liberties, 4 units

PSCI 4050 Big Arguments: Clashes and Connections, 4 units

o. Psychology

PSYC 3340 Human Development III: Adulthood and Aging, 3 units, ***or***

CDEV 3340 Human Development III: Adulthood and Aging, 3 units

PSYC 4250 Drugs and Behavior, 3 units

p. Sociology

SOCL 3150 The Family, 3 units

SOCL 4520 Personality and Society, 3 units

G. Multicultural Requirement (3 units minimum)

Within General Education selections, students must complete at least 3 units of the following course work that addresses multicultural, ethnic studies, gender, or nonwestern cultures issues. Courses that fulfill both the multicultural and another General Education area requirement are indicated below and are cross-referenced above with a "(G)":

ANTH 2060 Introduction to Cultural Anthropology, 3 units (D2)

ANTH 3000 Anthropology and Modern Social Issues, 3 units (F3)

ANTH 3900 Women: A Cross-Cultural View, 3 units

ANTH 4165 The Family in Cross-Cultural Perspective, 3 units

ANTH 4211 The World in Change, 3 units

ART 2525 Art History Survey–Non-Western, 3 units (C1)

COGS 4350 The Information of Meaning, 3 units

COMM 3550 News from the Front Media and Public Perception, 3 units

COMM 4160 Intercultural Communication, 3 units

CJ 3315 Hate Crimes, 3 units

ENGL 3940 Multicultural American Literature, 3 units (F2)

ENGL 4530 Gender and Sexuality in Literature, 3 units

ETHS 4200 The Minority Experience, 3 units (F3)

ETHS 4350 Multiculturalism: From Bias to Reality, 3 units

GEND 3320 The Sociology of Men and Society, 3 units

GEND 3444 Gender and Sexuality in the Middle East, 4 units

GEND 3700 Ethnic and Gender Politics, 4 units

GEND 3900 Women: A Cross-Cultural View, 3 units

GEND 4350 Multiculturalism: From Bias to Reality, 3 units

GEND 4530 Gender and Sexuality in Literature, 3 units (F3)

GEND 4600 Philosophy and Feminism, 3 units

GEND 4750 Comparative World Women: Perceptions of Gender, 3 units

GEOG 2020 Introduction to Cultural Geography, 3 units (D2)

GEOG 3010 Cultural Geography, 3 units

GEOG 3330 Ethnic Geography, 3 units

GEOG 3580 Cultural Ecology of Southeast Asian Peoples, 4 units

GEOG 4050 Restorative Human Ecology, 3 units

HLTH 4300 Family Health, 3 units (F3)

HIST 1010 World Civilizations I, 3 units (D2)

HIST 1020 World Civilizations II, 3 units (D2)
HIST 3090 Contemporary World History, 3 units (F3)
HIST 3400 The Great Teachings, 3 units (F3)
HIST 4750 Comparative World Women: Perceptions of Gender, 3 units
MDIS 3400 Latin-American Cultures, 3 units
MUS 2000 Music of World Cultures, 3 units (C1)
PHIL 4450 Eastern Philosophy: Concepts, Methods, and Context, 3 units
PSCI 2030 Global Politics, 3 units (D2)
PSCI 3444 Gender and Sexuality in the Middle East, 4 units
PSCI 3700 Ethnic and Gender Politics, 4 units
PSCI 3810 Multicultural Community Building and Conflict Resolution, 3 units
PSYC 3444 Gender and Sexuality in the Middle East, 4 units
SOCL 3250 Social Issues in Cross-Cultural Perspective, 3 units
SOCL 3320 The Sociology of Men and Society, 3 units
SOCL 4010 Race and Ethnic Relations, 3 units
THEA 3170 Real World Theatre: Comic Improvisation, 3 units (F2)
THEA 4550 American Theatre, 3 units (F2)

The Summit Program

Students have the option of joining the Summit Program as an alternative way to fulfill 6 of their 9 units of Upper-Division General Education requirements (area F in your catalog). Currently, students select one course from each of three areas: Math/Science, Humanities, and Social Sciences.

The Summit Program provides an exciting way to fulfill 6 of these 9 units by enrolling in a linked pair of courses. Each linked pair includes one Math/Science course (F1) and one Humanities course (F2); one Math/Science course (F1) and one Social Science course (F3). For the curricular area not covered by the linked pair, students will select an Upper Division General Education course from the traditional menu (F1, F2, or F3). These are the features of the Summit Program:

- Each pair includes 2 courses that have been linked on an engaging topic. Faculty members will integrate the 2 courses so that what students learn in one course will become the foundation to the learning in the next course.
- Students will take both courses with the same classmates. This will give them the chance to get to know each other and interact easily with each other in class discussions and group projects.
- Both faculty members in the linked pair may be interacting with students over both courses. Students will be able to develop a personal relationship with them -- they will know students by name.
- Enrolling in the Summit Program can begin in the term in which a student attains Upper-Division status (completion of 60 semester units).
- Any student can enroll in any linked-pair, regardless of his/her major, and have the pair fulfill 6 of the 9 units of Upper-Division GE requirements.
- Students must successfully complete both courses in the pair to have these courses fulfill 6 of the 9 units of Upper-Division GE requirements.
- By completing the Summit Program, students also fulfill their multicultural requirement (Area G in your catalog). One course in each pair has been designated as a Multicultural course.
- Summit courses cannot be electives for a major or concentration; they may be used as electives in a minor.

To receive information about the Summit Program, come to the First Year Program-Advising Office in the MSR Building (MSR 170), call 667-3304, or contact Dr. Marjorie Jaasma in DBH 128.

To enroll in the Summit Program students select a pair. If the first course in a pair is offered in Fall semester, they should enroll in that course via Web Registration. They will be enrolled in the second course in the pair by the program coordinator. If the first course of a pair is offered

during Winter term, students should enroll in that course and the other Spring course via Web Registration. During the first class meeting of the linked pair, students will complete a learning contract that summarizes information about the program.

Select from the following 5 linked pairs:

Pair 1: War & Peace (fulfills Areas F1 and F2)

These classes will examine issues of global conflict in the post WW II era, focusing on the Cold War, the Vietnam War, and the Gulf War through film, literature and technology.

Fall 2005: ENGL 3550, Years of War, Days of Peace: Post-1945 Literature and Film*, 3 units

Winter 2006: PHYS 3550, Physics for War, Physics for Peace, 3 units

Pair 5: Humans in the Information Age (fulfills Areas F2 and F3)

Why do we seek the kinds of information we seek? What is the meaning of that information? In these classes, we will examine questions about information and meaning.

Winter 2006: COGS 4350, The Information of Meaning*, 3 units

Spring 2006: PHIL 4350, Human Interests and the Power of Information, 3 units

Pair 4: Perceptions: How We See the World (fulfills Areas F2 and F3)

This pair explores cultural perceptions in terms of history and art as they influence areas of the world, such as Latin America, the Middle East, and Africa.

Fall 2005: HIST 4750, Comparative World Women*, 3 units

Spring 2006: HUM 4750, Perceptions of Culture, 3 units

Pair 3: The Real World: A Theatrical Work in Progress (fulfills Areas F2 and F3)

This theme will bring together two diverse topics in an entertaining and educational way. The focus will be on real world application of accounting, leading up to the creation of an original theatrical script.

Fall 2005: ACC 3170, Real World Accounting, 3 units

Spring 2006: THEA 3170, Real World Theatre Comic Improvisation*, 3 units

Pair 2: Waking Up to Nature: Ethics, Ecology, and Restoration Practices (fulfills Areas F2 and F3)

Can you live without frogs or spotted owls? Why care about the environment? Wondering what's happening to your environment and what you can do about it? Wrestle with environmental issues from around the world and close to home. Make a real contribution to our understanding of this Central California environment.

Fall 2005: PHIL 4050, Environmental Ethics, 3 units

Spring 2006: GEOG 4050, Restorative Human Ecology*, 3 units

* Designates Multicultural course that meets Area G requirement.

PLAGIARISM AND ACADEMIC DISHONESTY

Plagiarism is the representation of work by others as your own. Plagiarism includes written text; spoken words; charts, diagrams, and maps; as well as digital computer files. **All of your work must be your own.** If collaboration has been authorized, you must acknowledge the collaboration in writing. Like plagiarism, academic dishonesty is a form of cheating. It includes copying or using unauthorized notes during exams or other evaluations. Plagiarism and academic dishonesty result in serious consequences. At minimum, an instructor may give a zero grade for the assignment in question, but a failing grade in the class and being dropped from the course may be more appropriate and suspension (expulsion) from the university is warranted and may result.

For more information on the various kinds of plagiarism and academic dishonesty, refer to the CSUS student handbook (<http://student.csustan.edu/handbook/index.php?page=171> and <http://student.csustan.edu/handbook/index.php?page=173>).

20

READINGS – COPING WITH CLASSES

Getting the Best Out of Lectures and Classes by David Knight

Writing Essays and Related Assignments by Rachel Pain

Making a Presentation by Chris Young



Related -----

Plagiarism and Academic Dishonesty 19

- Another guide to GIS resources with a more European focus: <http://www.geo.ed.ac.uk/home/gishome.html>
 - Online GIS glossary: <http://www.geo.ed.ac.uk/root/egidict/html/welcome.html>
 - ESRI glossary of GIS terms with a focus on those used with the ArcGIS software: <http://www.esri.com/library/glossary/glossary.html>
- Software*
- IDIRISI GIS website: <http://www.clarklabs.org>
 - ArcGIS software site: <http://www.esri.com>
 - Integraph software site: <http://www.integraph.com/dynamicdefault.asp>
 - Core curriculum remote sensing tutorial: <http://umbc7.umbc.edu/~tbenja1/santabar/rscc.html>
 - Canada Center for Remote Sensing tutorial: <http://www.ccrs.nrcan.gc.ca/ccrs/eduref/tutorial/tutore.html>
 - NASA Goddard Space Center and NASA and US Airforce Academy tutorial: <http://www.fas.org/irp/imint/dosc/rst>
 - ERDAS Imagine image processing software: <http://www.erdas.com>
 - ERMAPPER image processing software: <http://www.ermapper.com>

Data

- Ordnance Survey of UK website: <http://www.ordnancesurvey.co.uk>
- Worldwide warehouse for digital spatial data: <http://www.gisdatadepot.com>

31

Getting the Best Out of Lectures and Classes

David B. Knight

As a student enrolled in university and attending lectures (with large numbers of students) and classes (with far fewer students), you can develop skills to ensure that you get the best out of different types of instruction. For all of your studies, *writing and thinking go together*. Participating in a class or simply listening to a lecture is not enough. To achieve your best you must attend to your writing skills as a way of enhancing your thinking skills. This chapter identifies common strategies that apply to the *learning process* in general and lists several points that pertain to small-class situations specifically.

Who is in Charge?

You are in charge. Although many courses are prescribed by the curriculum, you are responsible for your own learning. What you put into the learning process will have a direct bearing on what you get out of it. Obviously others help you by offering their insights, factual knowledge, conceptual understanding, methodological skills, and to give encouragement and feedback as you undertake your studies, but ultimately you are the integrator and, thus, learner. Think of a three-part teaching-learning system:

- The instructor *offers* (readings, lectures, seminars, lab and fieldwork assignments,

etc.), *responds* (to questions) and *evaluates* (assignments and exams).

- You *listen* (to lectures), *participate* (in class interaction), *read* (assigned and additional readings) and *do* (lab and fieldwork assignments).
- You, the learner, *take in*, *think about*, *null over*, *question*, *analyse*, *integrate* and *'report back'* (via essays, reports and examinations).

Before focusing on skills you can apply, a word or two about your instructors may be helpful.

Your Lecturers

You will know your instructors or lecturers as geographers, but remember they are also individuals. Accordingly, they will differ in their teaching methods. Consider two extremes. Instructor A walks into the lecture hall, stands behind a podium, reads lecture notes without paying attention to who is in the class or how his words are being received, and then abruptly leaves at the end of the allotted time. Instructor B regularly breaks away from notes to look at those present and 'read' faces as a way of gauging how well what is being said is being received. She poses questions to see if the students understand the material, and welcomes ques-

tions and answers them before continuing to lecture. She may spend time after class chatting with students about the lecture material or course assignments. Your instructor may approximate to or differ from instructors A and B.

To appreciate and benefit from contrasting teaching styles, be open and versatile so you can adapt to whatever comes. Hopefully, you will never encounter an instructor like the one identified by the poet W.H. Auden: 'A professor is one who talks in someone else's sleep.' Even if an instructor seems muddled there will still be a goal for the day's lecture, so your task will be to listen carefully to what may be a rambling discussion in order to identify that goal, otherwise the lecture may not be clear. Also, listen carefully for gems of insight. This point is made simply as a reminder that what you get from a learning situation is up to you, so even when a person is seemingly having difficulty communicating with the class, you can nevertheless benefit by being especially attentive to what is being said and by taking good notes. Ignore any instructor's personal mannerisms and be receptive to what he or she says; what is said is more important than how it is said. Note taking is a key skill for obtaining meaning from what you hear.

Why Take Notes?

Studies show that taking notes facilitates learning; recall is vastly improved for those who write good notes. Indeed, you are seven times more likely to recall information one week later if it is recorded in your notes. Even holding a pencil can trigger our minds to listen better to a lecture. You will decide on the degree of detail to record, but more is generally better than less. Do not try to copy down everything you hear. Above all, avoid verbatim recording; use a combination of the instructor's words and your summations.

Getting Prepared for Each Lecture and Class

Your class never starts at 2:00 p.m. or whatever time it is scheduled to meet. It starts some time earlier, when you decide to prepare for it. What should you do?

- Keep all reading and lecture/class notes, handouts and review comments together in a loose-leaf three-ring or pressure-spring binder (not a spiral-bound notebook).
- Read assigned and recommended material in advance of the class, making good reading notes. If questions arise during your reading, jot them down on a page in your binder for later consideration.
- Review your notes from the previous class.
- Start a fresh page for each day's notes.
- Record the date at the top of the first page and number each page. Note the lecture's title from the course outline or when it is given in class.
- Create an abbreviation system with which you are comfortable and record the abbreviations in a safe place, with a copy in the binder. Table 31.1 includes examples of abbreviations you might use. These are suggestions. If you make up your own abbreviations, keep the list in front of you until you are able to work from memory. Rehearse using your system before the start of term, perhaps taking notes of radio shows or family conversations. Once courses begin, continue to develop abbreviations as more terms become easily recognizable to you.
- Organize your notes effectively. This is as important as actually writing them. Two ways to divide your notepaper and use it are identified here. Figure 31.1a is derived from the Cornell system of note taking. There are three sections, the largest of which is the note-taking space or record column for notes recorded during class. After class, review these notes, highlighting major points by writing key

Table 31.1 Examples of abbreviations that can be used in note taking

cf = compare; in comparison; in relation to	w/ (or) c = with
CL = climatology	wh/ = which
EP = environmental perception	w/o = without
Esp = especially	↑ = increasing
G = geography	↓ = decreasing
FG = fluvial geomorphology	✕ = see (as in a note to self, 'I see what the instructor means' versus '?')
PP = political process	
Spa = spatial	
T = territory	
wh = when	
	* = most importantly

questions or pithy comments in the recall clue column. Then reduce your notes (within 24 hours of taking them) by critically reading the first two columns and identifying key words and phrases, and recording your own reflections, ideas and relevant questions in the section for 'summary' or 'reflections, ideas, questions'. Thus, the three completed sections will together provide a study guide.

The second scheme (figure 31.1b) is similar, although it provides less room for notes by having the 'reflections, ideas, questions' column at the right side of the page. One of these page formats may be good for you, but know that research has demonstrated that students perform better when they are allowed 'to encode in the way they prefer', so you may want to develop your own method. Whatever you

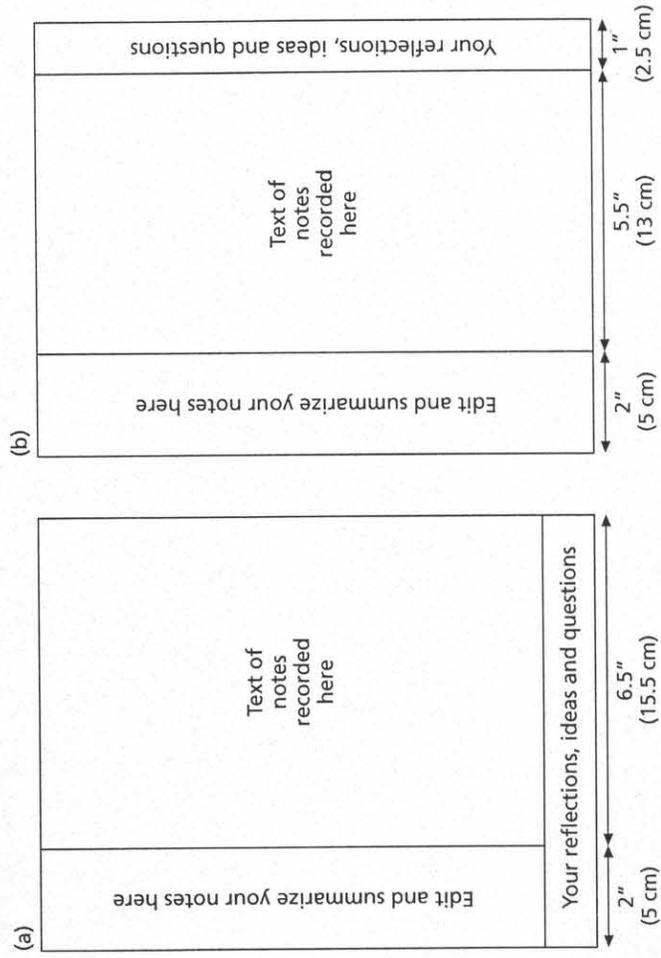


Figure 31.1 Note-taking systems. The Cornell note-taking system is shown on the left. Based on Walter Park, *How to Study in College*, 5th edition (Boston: Houghton Mifflin, 1993).

do, be systematic when taking and reading notes, preparing for class, writing lecture/class notes and completing follow-up reviews (see below).

How Can I Listen and Concentrate?

Skilled listening is essential. You need to be a skilled listener whatever the style of instruction. How can you improve this skill, if you think such is needed? Since a lack of interest and concentration are dual enemies of good listening, work to develop a mindset that will help you be open to and concentrate on whatever it is you are expected to listen to and study, no matter how hard the subject matter may be. If you listen poorly, you may not get a good grade. Blaming an instructor for being boring and uninteresting or moaning about how useless the course is will not get you either a better grade or sympathy. To get the most out of a class or lecture, you must listen with care. So, be both ready and attentive. A couple of tips that will help you are, first, be prepared to go to class. Read the assigned material. Take good reading notes, using point form to record your summation of the material read and also any questions you have. If you write down a quotation, use quotation marks (and include publication information, including page references, so you can find the appropriate source again). Memorize definitions and disciplinary jargon. Second, be prepared to listen. Your mindset is important. Before the event, try telling yourself something like: 'I am about to attend a lecture on X and I am keen to know what the instructor will say.' Even better, try not to fake it! Or say, 'I am going to listen', and follow through by identifying why you want to listen. Remember that listening is intentional and purposeful.

What the Lecturer Will Probably Do

Lecturers' teaching styles vary. However, the following points generally apply. Few lecturers or instructors summarize assigned readings; it is assumed you have done that for yourself. Students may be asked about the readings, so be prepared. In class, instructors will draw from a wider literature than the assigned readings, from fieldwork, or a set of lab experiments. Lectures often include new thoughts, some not yet published, so be attentive if something you hear is not in the assigned readings (which you will have already read). In terms of organization, instructors may: compare and contrast the findings of assigned material with new material; outline a concept or principle; identify and work through a problem; present and discuss a hypothesis; explore a case study; discuss an assignment; work through a technique; or make a major point and then give examples.

Given the variety of possibilities, you need to be attentive to what and why something is being said. Most instructors identify the goals and organization for the day. You may be given an outline so it will be easy for you to take notes. Paying attention to a well-organized instructor's style will sharpen your appreciation for both the flow of a lecture and its content.

A good lecturer will have an *introduction* (which may identify the overarching context), *thesis* (or statement of purpose for that day's class), *repetition* (but perhaps in a subtly different way from the first statement), *elaboration* (with information or data to support or expand upon the basic issue), *rephrasing* (of the thesis and the elaboration, perhaps from a different perspective rather than simply summarizing the elaboration), and *summary* or *conclusion* (whereby the lecture is brought to a logical end).

Active Listening

If you have prepared well, you will be an *active listener*. How can you improve your chances of getting the best out of a lecture or a class so that, in turn, you can give of your best at examination time?

- Attend class/lecture! Do not rely on a friend to take notes for you. You should be there to listen, write and think about what is said. However, consider having a 'buddy' to compare notes with afterwards, in case either of you has missed something.
- Help yourself. Avoid distractions outside the room: sit away from windows. Sit away from students who like to squirm, talk or otherwise distract. Sit where you can see (the instructor, the screen) and hear. Studies reveal that sitting near the front-middle is best for most people, whereas the back and sides are worst.
- Pay attention to the organization of the lecture. Ask yourself questions about overarching organizational issues. Has the instructor set today's material into the overall context of the course? Has an outline been provided? If so, can I use it as my organizational structure for when taking notes? What is the object statement? What background information is provided? Supporting evidence? Is this deductive or inductive reasoning?
- Stretch. Occasionally move your body, especially your legs and feet, and take a few deep breaths every now and then, but without interrupting the instructor or other students.
- Concentrate on what is being said: focus on the instructor's words. Try to ignore an instructor's boring monotone or any other distinctive characteristic. Be careful not to slip into thinking about next weekend's game or about a friend. If you find yourself drifting into dreamland, coach yourself to say 'Pay attention!' 'Listen to what is being said.' 'What is happening now?' By 'speaking'

to yourself (silently, of course), you will improve your concentration. Your goal is to be an active listener. Also, writing notes will help you concentrate.

Some Additional Points for Taking Notes

- If English is your second language but your studies are in English, use English when note taking. Studies indicate that retention of knowledge is increased by using the language of instruction.
- Do not write the whole time. Stop note taking from time to time to see and not just hear the instructor. Such 'breaks' help your overall concentration.
- Do not write everything verbatim. You might omit items if the instructor speaks faster than you write.
- Copy into your notes anything, including sketch maps, the instructor thinks is important enough to write on the board or identify with an overhead.
- Write down key words and phrases, examples, names, places, dates, equations, numbers and references. Use abbreviations.
- Record definitions offered by the instructor. These may differ from those in the assigned readings. You can reflect on differences later.
- If a question pops into your mind, write it down within brackets [] to indicate that it is your thought.
- Be especially attentive towards the end of the class period to the instructor's summary points and any course information. Do not pack up too soon!
- If there is a question period at the end of the lecture/class, listen carefully, and jot down pertinent questions and answers. Do not hesitate to speak up, for even if you think your question is trivial, it may be the question everyone else wanted to ask.
- Include all course handouts at the appropriate locations in your binder. If this

is not possible, put a notation in your notes about the handouts and keep all of that course's handouts together.

Listen for Clues

Be attentive to the instructor's use of leading phrases and key questions, such as, 'The argument I want you to consider is as follows'; 'Professor Johnston's opinion is worth considering. He has written . . .'; 'Why should geographers research HIV and AIDS?'; 'What process could have led to this result?'

Be attentive to linking expressions used by the instructor to signal a change of direction in delivery. These include words and phrases for:

- Cause and effect – accordingly, because, therefore, this logically leads to.
 - Concession – even though, given that, in the light of, of course, perhaps I'm wrong, could it be that there is another interpretation?
 - Contrast – conversely, despite, given this then, however, on the other hand.
 - Elaboration – for example (or e.g.), in other words, that is (or i.e.), let me put it this way, to take this point further, this example will make the point clear.
 - Emphasis – did you hear that?, especially, now this is important, let me repeat, most importantly, specifically, let me emphasize this point.
 - Numbers (as for lists) – first, finally, my last point, then, thirdly, ultimately.
 - Repetition – also, even more, in addition, in other words, too, to repeat, since you were probably thinking about lunch I'll repeat that point.
 - Summary or conclusion – in conclusion, finally, for these reasons we can conclude, let me summarize, my final point, to wrap up, what I have been saying today can be summarized as follows.
- Be aware of the instructor's tone of voice. For example, the last point in a list may be

delivered with a tone of finality, or perhaps sarcasm is being used to see if you are in fact listening.

Listen for pauses. The instructor may be mulling over a point before speaking again, signalling that a new direction in the discussion is about to occur, looking at the class in anticipation of posing a question, or checking to see if the students are showing puzzlement. Maybe he or she has swallowed a fly, as one of my geography instructors once did – in mid-sentence! In other words, do not just listen to the words but be aware of how the words are delivered, why, and ask what they mean.

Three Post-class/lecture Reviews

The learning process does not end when you leave the lecture hall or classroom. There are three follow-up reviews you can do. Studies have demonstrated that reviewing notes clearly results in superior recall.

Immediate post-lecture/class review

- Before you leave the lecture hall or classroom, quickly scan your notes to catch if you missed part of a definition or perhaps some data. If so, ask for them from a student colleague.
- Do not waste time rewriting your notes. Instead, review.
- Review your notes while they are still fresh in your mind (within 12 to 24 hours). As suggested above, write summary comments, reflections and questions in either the right-hand column or bottom space (if you use one of the formats in figure 31.1).
- Recall what you learned from the pre-class readings by rereading your reading notes and integrating them with what you have just learned. Points raised from the readings may help you answer questions you posed for yourself during the class or during your review.

Periodic review

Immediate post-class or lecture reviews of your notes can be invaluable. However, a second type of review is also important. The periodic review considers a cluster of related course materials. At the start of term, establish times during the term for reviews that encompass a series of topics. Since you will be taking several courses, stagger the periodic reviews so that you will have only one or two per week, starting, perhaps, in the second or third week of term. If the course material has logical breaks, use them as your review markers, otherwise establish your own. The periodic review permits you to integrate readings, lectures, labs, fieldwork, and your observations and questions. By doing both post-class and periodic reviews, you will develop a deeper and broader appreciation for the material being offered to you.

Full-course review

The full-course review is the third type, to be completed prior to final examinations. This review will be easy if you have done the other reviews.

Out-of-class Contacts

Your instructor will probably have posted 'office hours' during which he or she will gladly respond to questions you may have. Do not overuse such times for the instructor has numerous students. However, if you have a need for contact to deal with specific issues that you feel are not being addressed, either during an end-of-class question period or during the open office times, then request a specific time for a meeting.

Prepare for the meeting. Think carefully about why you want to speak with the instructor and make a list of any items you want to identify. Order them: time may slip by so quickly you will not be able to get to minor points. As a courtesy, give the instructor a copy of your questions when you enter

the office. Additional sources for help and feedback may include a graduate teaching assistant or perhaps a tutor to whom you are assigned. Use them!

Conclusion

Getting the best out of classes and lectures has to be done by you, using the skills identified in this chapter. By preparing adequately, having a positive attitude, actively listening to what is being said, taking good reading and lecture notes, and reviewing in the several ways noted, you will be able to integrate and understand any course's material. In other words, a class or a lecture is not an isolated event. It is a part of the *learning process*, a process that starts at the beginning of the term and continues until the course is completed. This stated, however, always remember that material from each course you take provides a building block upon which you can add other (course) blocks, so do not think that just because you have 'done that' you can forget what you have learned!

The best way to hurt yourself is to miss a lecture or class and not to do the expected work in the order assigned or by the timetable expected. By keeping yourself 'on track', you will find that the learning process can be both enjoyable and rewarding. Above all, remember that listening, writing and thinking go together. With so much riding on your note-taking ability, it is wise to take time to perfect the integration of these three skills. Finally, then, doing a good job of note taking right from the start will save you hours of agony.

Further Reading

Northey, M. and Knight, D.B. 2001: *Making Sense in Geography and Environmental Sciences: A Student's Guide to Research and Writing*, 2nd edition. Toronto and Oxford: Oxford University Press.

Writing Essays and Related Assignments

Rachel Pain

Those who are profound strive for clarity; those who are not strive for obscurity.
Friedrich Nietzsche (1844–1900)

Why Write Essays?

There are lots of arguments against geography students writing essays. The most common is that they have no relevance for the sorts of things geography graduates do in the 'real' world. A development agency officer analysing a community consultation, a civil servant writing a ministerial brief or an environmental campaigner working on publicity material is unlikely to begin, 'In this essay I will consider the question by ...'. Still, we continue to set essays and related written assignments because the skills they involve are transferable to these vocations and more – they remain a good way for you to demonstrate your ability to synthesize and evaluate a wide range of material, construct a coherent argument and express yourself clearly.

Swimming, Sinking and Learning to Write

Traditionally, not only were essays the dominant type of assessment, but a mystique existed around the task of writing them. Lecturers assumed that very capable students had an innate understanding of this, and that those who didn't would pick it up

by osmosis during their time at university. This is slightly facetious, but you can see the danger of the 'sink-or-swim' model – students who cotton on early or have been coached to write essays at school tend to do well, while those who don't may sink. They may also be good at geography, but never use the expected (yet unspoken) techniques. Today this model of assessment is widely viewed as unfair, and is uncommon, even in the oldest universities. Most lecturers would recognize that it is only fair to share the 'rules' of essay writing, tell you how your work will be assessed, and give feedback which helps you to make improvements as well as show you where you went wrong. In other words, while many students are much more concerned about what to write than how to write it, writing is a skill you can learn and improve on; one of the most valuable you'll develop during and beyond your degree. All this is not to say that imagination and spontaneity don't count – good technique, and creativity and flair, work together. As I hope to demonstrate in the advice that follows, writing and thinking are joined at the hip: mastering one will help you do the other as well as you can.

Answering the Question

This is the golden rule. It seems obvious, but is regularly overlooked in exam answers and coursework essays. However interesting and intelligent your essay is, if it isn't wholly pertinent to the question set, it has to be penalized. So find out precisely what the question is asking, and ensure you understand what each word means within the context of the essay. Think about what the content words ('glaciers', 'Margate' and 'actor network theory') and the command words ('outline', 'discuss' and 'compare') entail, and in what overall direction the question is pointing you. Think about permutations, as there are often valid alternative ways of understanding and answering each question.

Researching and Planning

Try to read widely. Look for sources other than those on the reading reference list given. Use plenty of journal articles, which are often more up to date and easier to get hold of. Before you start researching it's a good idea to jot down your own thoughts to clarify what you think (even if you've never thought about it before) and to give you a starting point. As you read, your ideas should begin to develop, and you will compile factual material, ideas, arguments and evidence that need to be included somewhere in the essay. Gradually you can begin ordering and sorting your material into a provisional plan for writing. This is an iterative process and does not end until you read through your finished essay for the last time. Although the same information may justifiably be arranged in different ways, most essays have an introduction, a systematic body of analysis and a conclusion.

Introducing Your Essay

A concise and clear introduction makes an impression and puts the reader in a favour-

able frame of mind from the start. There are no hard and fast rules about what should go into it, and nor should it be too long, but the following suggestions may help. First, you may want to set the issue in context – for example, consider its relevance to geography or the wider world. Second, you should indicate somewhere what you understand by the question and the key words and issues; define terms if necessary, and show how you are interpreting the question. Third, briefly outline your essay. You may want to rewrite your introduction after you have finished the rest of the essay, so that it relates more closely to what you have actually written – again, this iterative development is a good sign.

Structuring Your Essay

The lack of a clear structure makes assessing the ideas and arguments in the essay a difficult task, and seems to indicate a confused and disorganized writer, so use your plan to organize the information, arguments and examples you are going to use in a logical and comprehensible way. Bear your ultimate goal (your main argument) in mind throughout, and work towards it logically. You can signpost each stage of the essay to achieve this – start each section by making the general point the section covers and connecting it with the wider argument, then go on to illustrate or elaborate it. Once you are good at structuring essays you might want to think about using structure creatively to achieve an effect on your reader – arguments can be made more persuasive through careful timing of key points or important evidence.

Staying Relevant

Stick to the question – this is all that is required of you. You will get no marks for irrelevant material, and lots for concentrating on and developing the key issues involved.

So if a question asks you to 'account for the spatial location of salt marshes on the Lanchashire coast', don't spend several pages explaining how salt marshes developed elsewhere – only mention this where it has an important role in your answer, and then be sure to indicate why you are including this material. If you often get feedback suggesting you go off on tangents, ask yourself as you write each paragraph if what you are writing is still relevant. If necessary, spell out its connection to the question and how it fits in with what you have said so far.

Making and Supporting Arguments

Most essay titles will demand you to present contrary evidence or arguments and evaluate them in a careful and reasoned way. At the same time, you should have confidence in your own judgement and opinions. Tragic assessment moments are created by well-referenced and structured essays which are worthy but dull, because we can't see the student's own thinking, interpretation, opinions or ideas. Human geography in particular is inherently political, so take up a position and fight a corner. Some lecturers are renowned for having strong opinions – these are often the teachers you will remember all your life. But bear in mind that the nature of the academic endeavour is that difference and debate should be embraced, so you don't have to agree, either with them or with any particular texts that you read. Provide evidence and substantiation for any line you take, making good use of examples and case studies, and don't be surprised if you change your mind as your work develops.

Avoiding Bias and Stereotyping

Most geography departments have policies that discourage sexist, racist and other dis-

crimatory forms of writing. Even if yours does not, you are likely to be penalized for it. When we fall into writing that reproduces stereotypes – which we all do from time to time – not only does our writing reflect and compound prejudice, but the clarity and precision of our work are compromised. Inclusive writing involves being critical and reflective of what you write. It is obviously important if you are dealing with countries, cultures, ethnic, gender or social groups different to your own, but sometimes we are even less sensitized to clangers about our own cultures. Here are some examples from student work:

'Older people are frail with limited mobility and social interaction' – beware of generalizing (this is only true of a minority of older people).

'Man's impact on the environment' – beware of the universal man (unless you really do mean males only) – try 'the human impact on the environment'.

'If Africans would embrace global capitalism like Europeans have, Africa could develop normally' – this is riven with assumptions about the superiority of Europeans and capitalism (again, poor style compounds the limited content and thought).

Developing Your Own Style

Although some students have already developed a natural and mature writing style by the time they get to university, many have not. This is something that comes with practice, and is well worth working on. Be critical of the geographers you read: does the way they write help to get their message over clearly and succinctly? Where you are impressed, emulate their style. Try to keep your writing clear and concise, and avoid the use of lengthy sentences with complex subordinate clauses. Certain lecturers and tasks ask

that you avoid writing in the first person, although in human geography it is becoming more common to personalize writing (if in doubt, ask). Finally, never underestimate the impact which poor spelling (and poor spell-checking), bad grammar and slang have upon the overall feel of your essay, and never waffle in order to fill up space. Lecturers know all about waffle, and detect it in others with relish. Quality is more important than size.

Acknowledging Your Sources

Some of what you write may be truly inspired, but most will draw on other people's material and ideas. Referencing can be a tiresome mechanical task, but providing detailed and precise information on all the sources you have consulted for a piece of work is essential to differentiate between the following:

- material (ideas, arguments, statistics, etc.) you have reproduced directly from a book, article or website (you should use quotation marks, and give author's surname, date and page numbers);
- material you have taken, interpreted and drawn into your essay in your own words (use author's surname and date);
- your own ideas, arguments and interpretations (no referencing required).

The rationale behind systematic referencing is not simply to check for plagiarism – 'has she downloaded this from Essayz-4-U.com?' – as subject experts who have read thousands of student essays, your lecturers have a well-developed nose. Rather, good referencing encourages effective synthesis of your own and others' views, adds weight to your arguments and counter-arguments, indicates to your reader which sources you have consulted, and allows other researchers to refer back to the original material. References are cited and listed in a standard form, usually 'the Harvard system', where references are

given in the text as author-date, and the full citation is given in a list at the end of the essay. Many geographical journals, such as *Area* or *Transactions of the Institute of British Geographers*, provide clear examples of this format. Every source cited in the essay should be listed at the end. Your department should supply you with a guide explaining the technicalities.

Concluding

A good conclusion is extremely important – an effective final paragraph can even partially compensate for a poor essay. Like the introduction, you should keep it fairly concise and steer clear of introducing new ideas, material or examples. It's always important to summarize the main points you've made, and be sure to express very clearly your verdict on the question – answer it! You may then want to look outwards again to the bigger picture, or make one or two predictive comments about future trends. Your last sentence can make an impact, so think about it carefully.

Box 32.1 Checklist for writing essays

When you've written your essay, have a read through and ask yourself the following questions:

- Have I answered the question, the whole question and nothing but the question?
- Have I written in a clear and fluent style?
- Have I included a clear introduction and conclusion?
- Have I structured and signposted the essay so that it's easy to follow?
- Have I read a range of sources and referenced them consistently?
- Have I made my own position clear and argued a case?
- Have I avoided sexism, racism and other prejudices in writing?
- Have I used spelling and grammar correctly?

Finally . . .

Remember that the ability to finish an essay minutes before it is due in is a worthy skill, but will probably lose you marks. A short time spent checking and amending your essay can pay off. Box 32.1 on p. 183 offers a checklist for the final read through.

The tips and techniques in this chapter are not intended to be prescriptive, as assignments are set in different ways and lecturers have varied expectations of your work.

Some are more open to alternative ways of writing and structuring essays than others. So long as they make this transparent, and you try to meet their expectations, you can be creative in expressing your geographical knowledge and ideas clearly and effectively in new ways.

Further Reading

Kneale, P. E. 1999: *Study Skills for Geography Students: A Practical Guide*. London: Arnold.

33

Making a Presentation

Chris Young

Talk in Front of the Class – Never!

‘I hate giving presentations’ is a comment occasionally heard being muttered by students in university geography departments. This is understandable since students generally worry about speaking in front of their peers, despite the fact that no such worries exist when they are in the student union bar. The main concern is usually nerves resulting from a feeling of being exposed. Despite this, most recognize their importance and those same students can later be heard saying, ‘That wasn’t so bad’. While you may believe that reading for a degree in geography is about improving your academic performance and increasing your knowledge of your favourite subject, these days it is also about enhancing your career prospects. With this in mind your geography degree will encourage you to develop and improve a large number of skills that employers want graduates to have. One of these skills is an ability to communicate orally in an effective and fluent manner.

Presentations may take several forms, some formal, some less formal. Usually there is an expectation that you develop your ability as you move through your degree. This may involve an increase in the amount of time that you speak for, or it could involve your having greater freedom with the material. Whether you are asked to give a formal lecture, or a presentation on a topic within

a seminar, or report on projects, fieldwork or other work you have done, there are a number of tips that will make the job easier.

Where Do I Start?

As with most pieces of work, one of the first questions you should ask is: what am I expected to do? There are two aspects that are important in presentations: the skill demonstrated in making the presentation and the academic content. Unfortunately, different tutors or lecturers will almost certainly be looking for different abilities when assessing presentations, and no rules can be given that will apply in all situations. If your tutor provides a list of assessment criteria, use them to guide your preparation and think critically about the presentation you are preparing.

Even if the presentation skills are the main focus, before you can give a presentation the geographical content clearly needs to be determined. This is essentially the same as for any other piece of academic work – you should identify the right material and ask the right questions. It is highly likely that you will need to demonstrate an analytical approach to the information and show clear evidence of applying your geographical knowledge to the task in hand. To ensure that you can do this, start working on the topic early – don’t leave everything until the last minute.

One of the controls on what can be said, and the detail you can provide, is the time available to you. Presentations may be short, possibly five or ten minutes, or they may last up to 20 or 30 minutes, allowing you the time for increased detail and greater depth. However long you have, plan carefully to avoid over- or under-running. Both show poor planning and even the less formal presentations should be as planned as possible. One of the most common problems that plagues student presentations is the attempt to use all the information that you have – even if it is not fully relevant. It is unlikely that you will have the time to impart everything you know about the topic – so don't try. Draw out the key points and decide which information you can leave out. You can then select a few examples for illustration.

Once the relevant material is selected it needs to be carefully organized and structured. One way to do this, and help you keep the audience interested, is to 'tell a story'. It can be useful to start by identifying the broad context. You could introduce the appropriate geographical literature or clearly identify an area of contention that is going to be examined throughout the presentation. Try to organize the information and develop your arguments in a clear and logical order, ensuring that the main issues are identified at each stage.

Pitch your discussion at the right level for the audience – is it non-specialist or specialist? You do not want to confuse or be patronizing. Keep jargon to a minimum, although you need to ensure that you use appropriate geographical language. Some technical or specialist terms may be unavoidable, in which case it may be necessary to provide clear definitions – a handout can help to do this.

In these preparation stages it is really important to organize your work discipline. This is especially true if you have been asked to work as part of a team, since this will involve regular consultation. You and the team will need to prioritize tasks and ensure that

they are completed by a deadline. This can be achieved by using a planning sheet. The important requirement is that you have plenty of time before the presentation to practise and check the timing and flow of what you have prepared. This helps you to be confident and relaxed when you make the presentation. As with any type of work, the more you prepare the better the end result will be, since familiarity breeds confidence. If you feel confident in what you have done, you will feel more confident in presenting it to others.

A number of tips can help here. If you are working as part of a team, have a good working knowledge of each other's topics. Make sure that you understand what you are talking about and know the information thoroughly yourself. Make sure that the work is precise, accurate and of a high standard. This especially applies to your visual materials (see below).

It can also help to use other students as a trial audience. They can help you to identify where improvements can be made. If you can identify problems in advance, then you are most of the way to solving them. However, be careful – practising on your own will always be faster than in the final presentation, so if your timing is right under practice, then you may need to cut something. Once you have the material clear in your head, then you are ready to make the presentation.

Making the Presentation

What makes a good presentation? We have all sat and listened to both good and bad speakers and we all appreciate different aspects of presentation style. There are, no doubt, tutors or instructors whose style you like and those you don't – what is it that you like, or dislike, about what they do? Can you model your style on the best, and what should you try to avoid?

You will probably be most nervous about making your presentation immediately prior

to starting. This is a little unfortunate since your introduction is the key to setting the stage. If you can start well, however, nerves are usually forgotten and you can start to enjoy yourself and think more about the material and where it is going.

The best way to start is to outline your story and set out your objectives clearly. Since you need to relax, a good ploy is to grab the audience's attention with something controversial or amusing such as a cartoon or a quote that can be put up as a visual. On your part you need to show enthusiasm, and one way to ensure this is to smile. Some movement can also show enthusiasm and help generate interest by providing emphasis. However, don't move about too much because it can be distracting. For example, try to avoid waving your hands about wildly. Equally, avoid standing still with your hands in your pocket – this shows boredom and lack of interest.

Although the material may be written out partially or in full, try to avoid reading since this can suggest poor preparation. While reading is inevitable, in places you should, as far as possible, look up and maintain eye contact with your audience. If you watch the audience you can see if people are interested and taking notes (if appropriate), if a point was missed or not understood, or whether they are bored silly – you can then take appropriate action. It also helps to give the audience the feeling that they are involved. While in some cases your tutor may prevent you from using notes, if you do use notes keep them brief – it can help to use the visuals as your source. The key is practice, so that you are confident with the material without having to read it.

When talking, make your voice clear and loud enough so that those at the back can hear everything you say. To maintain interest and show your enthusiasm, vary the speed and alter the intonation. If the audience is expected to take notes, then speaking slowly is important. One of the common faults occurs when you read, since this usually results in material being delivered too

fast. To help the audience you need to make explanations clear, and it can help to re-emphasize important points in several ways to ensure that you get them across. However, repeating the same words will not necessarily make anything clearer (a potential problem if you read). Try to restate the information from another angle, for example with a case study.

Another common problem can occur with the pronunciation of technical or specialist terminology. Check before you start how to pronounce key terms or names, especially if they are geographical in origin. Don't worry if you make a mistake or if you leave something out – we all do. No one will probably know, but if you know that a mistake has been made it is best to correct it so that you do not lose credibility. It is highly unlikely that you will be penalized for owning up!

Visual Aids

The most useful aid available to you when making a presentation will be your visual material. The most common form of visual material is the overhead transparency. However, you may also wish to use slides or extracts from videos, or other more technologically sophisticated media forms such as PowerPoint. Visual materials should be carefully prepared. You must make sure that you know exactly why you are using them. For example, PowerPoint is a powerful tool which allows text, graphics, pictures, video and slides to be used together, but it can also be gimmicky and you can waste a lot of time producing gimmicks rather than concentrating on appropriate and effective material.

Using visual materials can help reduce your notes and help to prevent reading. They can reduce confusion, increase audience participation, reinforce key points and allow you to face your audience. However, there are a number of common pitfalls that are best avoided.

Check that the projector or any other fa-

cility is working correctly and that you know how to use it properly. Also check that the screen can be seen from anywhere in the room. Stand to one side of the projector, not in front of it. Whatever form of visual aid used (words, tables, diagrams, maps or graphics), make it *large* and clear when projected (a font as big as 24pt may be necessary in larger rooms since normal typescript usually means that anyone at the back cannot read it). Maps or tables from books may need to be redrawn and simplified, highlighted or enlarged to give the maximum impact. A useful rule is no more than six *large* words on one line. This has a number of advantages, not least that it keeps the message short and succinct. The use of colour can be beneficial but some colours, primarily yellow and orange, do not show up easily and are best avoided. Too many or overfull and complex visuals can swamp the audience, so select the information carefully. Leave visuals up long enough for the audience to take in. If the material is complex, it may be wise to provide handouts.

How Do I Stop?

It is important that you don't stop suddenly without some form of conclusion. It is always useful to summarize your main points. If you find you are running out of time, then you need to have the confidence to cut something. However, try not to cut the easiest bit – the conclusion – because this is where you identify your main points succinctly.

One way to signal the end of the presentation is to invite questions. To do this successfully you must be confident with the material because when handling questions you need to provide thoughtful answers. In some cases the audience will ask questions to confirm they have understood. This may occur either during and/or after the presentation and is normal. You should not worry if questions are asked – at least it means that the audience is paying attention! Always try to answer such questions, but always be pre-

pared to own up if you do not know the answer.

An alternative way to finish is to indicate where or how the work could be developed further. This might broaden or focus the work more and could leave open questions for the audience to think about. You will not have covered everything, so give people something to go away with. Do not let them be totally passive.

Lastly, make sure that you finish on time. This helps to show good organization and preparation.

Box 33.1 Checklist of key points to bear in mind when making a presentation

Preparation

- Find out what the requirements are – and follow them.
- Start preparation early and determine the content, keeping in mind the time available.
- Plan and structure the material in an organized way. There are three key aspects to this:
 - asking the right questions;
 - applying your geographical knowledge to develop your argument;
 - using an analytical approach.
- Know your information (and that of others if working in a team) and practise to check your timing.

Making the presentation

- State your objectives clearly and outline where you are going.
- Keep your notes brief and avoid reading.
- Keep in eye contact with the audience.
- Speak slowly, loudly and clearly and vary your intonation.
- Repeat important points.
- Make visuals large, clear and succinct.
- Watch the clock and keep to time.
- Finish with a conclusion which summarizes your main points.
- Lastly – smile, enthuse, relax and enjoy.

Conclusion

Making a presentation as part of your geography degree is a learning experience which can be enjoyed. Presentations will develop your confidence in a number of ways – not least in your ability to communicate information, ideas and arguments effectively to both specialist and non-specialist audiences. You are presenting the results of your own research in a way that can show your enthusiasm for your subject far more easily than any written report. There are a lot of things to think about, but if you prepare fully and are organized this will allow you to relax and enjoy yourself.

Finally – think about your appearance.

This can be an integral part of setting the right atmosphere – audiences react strongly to every aspect of your appearance. A dragging shirt-tail or an old pair of jeans with the knees hanging out can be very distracting. You may not need to be too formal, but making sure that you are presentable can help to give the right impression.

Further Reading

- Kneale, P.E. 1999: *Study Skills for Geography Students: A Practical Guide*. London: Arnold.
- Young, C. 1998: Giving oral presentations, *Journal of Geography in Higher Education*, 22(2), 263–8.

21

INTERNSHIPS

An internship is a valuable method to obtain on-the-job experience. Its benefits include providing job experience (place it on your resume), providing contacts with employers, and getting a sense of what you want to do after graduating.

Jobs in GIS and planning are becoming more common and geographers easily fill these positions with experience gained in the classroom and through internships. These two areas offer ample opportunities for internships, especially with local government agencies. Over the past few years, many of our students have had internships at various local and state agencies including the City of Turlock, San Joaquin County, Stanislaus County, Merced Area Association of Governments, City of Modesto, the Great Valley Center, Compass Maps of Modesto, Modesto Junior College, McHenry Museum and Historical Society, Ecology Action of Modesto, Condor Earth Technologies, and CalTrans. While some internships are paid, the most are not. A good internship allows you to be part of the agency's day-to-day activities.

Talk with your major advisor to explore internship possibilities. In addition, go to the campus's Career Services Center (<http://www.csustan.edu/career/Pages/sses.htm>) in MSR 245, and better yet, go directly to government agencies, organizations, and local companies that interest you and inquire about internship programs. In this situation, you should provide the name of a faculty member as a reference, an updated resume, and you should volunteer your services.

Be sure that you have the appropriate skills for the internship and that you stick with the internship for a specified period of time. Some students get an internship and promptly leave it the moment they believe it is not what they want to do for the rest of their life. This hurts the chances of other students that want internships. Plus, an internship provides necessary work experience that you will need when you are chasing your dream job.

Again, internships are important because you are more employable after this experience, and it can provide you with a list of contacts for job opportunities. Additionally, you may end up working for the agency where you had your internship.

Related -----

Occupations 27

22

four – geography's facilities

"A map is the greatest of all epic poems. Its lines and colors show the realization of great dreams."

Gilbert Grosvenor

"The principle training of the geographer should come, wherever possible, by doing fieldwork."

Carl Sauer

LABORATORIES

THE FIELD

Our Geography program emphasizes many educational goals and objectives including one that gives students field experience in as wide a variety of natural and cultural environments as possible. We hope to instill in students the skill of observation and an appreciation for the importance of working with other cultures in a variety of places to ensure the understanding of environmental and cultural relationships and processes.

Fieldwork is often fundamental to the way geographers perceive, research, and understand the world. As former AAG President Patricia Gober (1998, "Distance Learning and Geography's Soul." *Association of American Geographers Newsletter*. May 1998. 33:5. page 2) states, "Most geographers have a deep connection with places, one that has drawn us to the field, one that we communicate to students, and one that binds us together as an intellectual community." For this reason, the field is considered our most important laboratory.



23

LABORATORIES – GIS LAB

The **CSUS GIS lab** supports teaching and research with geotechnologies including geographic information systems, remote sensing, and global positioning systems. This lab is a hands-on, exploration-based, multimedia-learning environment where students gain personal experience with ideas, concepts, and problem solving from a variety of disciplines. Computer techniques make some complex processes (like analytical modeling, non-linear and spatial correlation, layering, diffusion, and cartographic representation) easier to understand, and give students direct experience in applying concepts to problem-solving exercises. This approach to learning is consistent with broader educational shifts. The lab supports and encourages the use of computer technology in all aspects of geographic research including data collection, storage, management, analysis, and display. The lab is located in L-110G. Each semester, a GIS lab schedule is posted on the lab's door and can be found on-line at <http://alslab.csustan.edu/>



LABORATORIES – BIO-AG

The **Bio-Ag Center** serves as an outdoor laboratory and field site on the CSUS campus for observation, demonstration, and experimentation relating to the permaculture approach to sustainable land use and environmental planning. Under the guiding principles of permaculture, we utilize biointensive and dynamic approaches to gardening and agriculture, while promoting heritage plant and animal species and guilds of plants and animals. In this outdoor laboratory and classroom, faculty from a wide variety of disciplines can provide practical experience and field application for their classes on topics such as analysis of ecosystems, soil relationships, microclimate conditions, plant and microfaunal diversity, ethnoecology, gardening as therapy, landscape restoration, landscape art, and others. Central to the role of the BioAg Center is environmental education; the campus site will be used for the presentation of educational workshops for future and practicing teachers, elementary, middle, and high school classes and other community groups. Another role of the BioAg Center is to teach basic principles of permaculture techniques which can be used in urban gardening, elementary and secondary school-based programs, residential landscaping and in agriculture in general.

The focus is on maintaining and improving soil fertility, preservation of heritage species, building on complex ecosystem principles that emphasize food web interactions and increasing plant and animal diversity on site. An additional principle is to strive for low cost and low maintenance activities on site through the use of appropriate technology in alternative energies, irrigation, seed saving, recycling, soil preparation and agriculture in general. Aspects of good nutrition and the use of plants/gardens as therapy are stressed. The ethnic diversity in the Central Valley provides an excellent opportunity for studies in ethnoecology and for demonstration ethnic gardens on site.



Related -----

Maps GIS Lab 6
Maps Bio-Ag 7

THE BRIDGE

The BRIDGE community center was started by geography faculty from CSUS and Anthropology faculty from Modesto Junior College in 1989 as a site to get students involved in helping solve community problems and provide community service while they learn about other cultures as well. Several courses in geography use it for cultural immersion purposes. The BRIDGE, located in a low income, ethnically diverse area of west Modesto, has been providing translation and cultural liaison services; health, nutrition, and parenting workshops, ESL and GED classes and tutoring, training in organic gardening, afterschool activities for children and teens, and acculturation and counseling services for Southeast Asian families since 1989. Cambodian, Hmong and Lao clients come to The BRIDGE from Stockton, Merced, Modesto and other areas in San Joaquin, Stanislaus, Merced and Fresno counties. While most of our clients are Southeast Asian, our guiding principle is that anyone who walks through the door and asks for help will receive help from us or a referral to another agency that provides the type of assistance needed.

Over the past 16 years, The BRIDGE has provided services to almost 32,000 Southeast Asian clients. We have also given over 1,000 cultural training workshops and presentations in the broader community. More than 2,500 students have done community service learning, including some graduate research, through The BRIDGE and its client network.



25

STUDY ABROAD

Completing part of your degree in another country will enrich both your degree program and your life in many ways:

- You will enhance your education by adding a new, international perspective to your studies.
- You will have more career options. Your international experience provides a strong professional advantage. The world's most successful businesses are looking for people with international experience.
- You will develop first-hand knowledge of other societies and cultures.
- You will improve your foreign language abilities.
- You will broaden your perspective on U.S. society and yourself.
- You will experience personal growth, especially in the areas of independence and self-confidence.

Do you think you cannot afford it? Think again! Many program costs are comparable to the costs of studying here and financial aid applies.

If you think you might be interested, take the following steps:

Step One: Ask yourself the following questions:

- Why are you interested in studying abroad?
- Where do you want to study?
- How long do you want to study abroad – academic year, semester, summer?
- Do you want to study a particular subject while abroad?
- Do you want to fulfill requirements for your major or minor?
- Do you know any languages other than English, or are you interested in learning another language while abroad?
- Is cost a significant factor in your program selection?

Step Two: Research the various programs that are available (http://www.csustan.edu/Global_Affairs/data/Study-Abroad/Data/programs/index.html).

Step Three: Talk with your geography advisor about the program that most interests you.

Step Four: Attend a Study Abroad Information Session. Information sessions provide an introduction to study abroad and an overview of options for CSU Stanislaus students.

Step Five: Make an appointment to talk to the Education Abroad Coordinator. You will work together to define and clarify your goals and program needs, and to select a program on the basis of your qualifications and interests. Once you have selected the appropriate program, you can begin the application process.

Note: Most of the above was taken from the Global Affairs webpage. For more information, checkout their complete webpage at C:\Committees\Departmental\Study Abroad.htm or visit them in SSB145.

OTHER FACILITIES AND RESOURCES

LIBRARY – The library is found in L-230. Their general webpage is <http://library.csustan.edu/>. To access OLLIE, their library catalog, visit <http://geoweb.csustan.edu:8000/>. A list of electronic journals can be found at <http://library.csustan.edu/serialsolutions/onlineJournals/jnlIndex.html>.

GENERAL COMPUTER LABS – Information on the campus's general computer labs (see section 23 regarding GIS lab) is available at <http://www.csustan.edu/oit/AITS/LabsMain.htm>

UNIVERSITY STUDENT COUNSELING SERVICE – Information about student counseling is available at <http://www.csustan.edu/counseling/> or their main office is located at MSR210.

TUTORING – To receive tutoring, a student must receive permission and fill out a form that is available in MSR230. Visit their webpage at http://www.csustan.edu/SSS/Data/Staff/Tutorial_Assistance.html for more information.

CAMPUS WEB PAGE – The main webpage for CSUS is located at <http://www.csustan.edu/>.



27

five – life after CSUS

“During the next decade geography will move to center stage in our society as mobile, real-time, interactive geographic technologies and systems are adopted...in most large-scale private and governmental organizations...”

Doug Richardson

OCCUPATIONS

The Association of American Geographer’s (AAG) brochure titled Careers in Geography lists three primary job market sectors for geographers: education, government, and the private sector.

Education...needs K-12 teachers with solid geography backgrounds, since all states have recently introduced higher standards for geography instruction. At the college level, exciting new courses attract large numbers of students, and the demand for faculty with regional specialties or theoretical and research capabilities is strong.

All levels of government...hire geographers. They may work for local and state economic development or planning offices, conduct research in recreation and park use, or map land use from satellite images. Many geographers at the federal level work for the National Imagery and Mapping Agency, the Environmental Protection Agency, the Central Intelligence Agency, the U.S. Geological Survey, and the Department of State.

Private sector firms...need geographers who can develop and apply geographic ideas and technologies to complex real world systems. Geographers also conduct marketing studies, plan transportation routes, understand international markets, and determine environmental risks associated with site locations. From transportation agencies to electric utility companies, and from forestry to telecommunications, real-time mobile interactive geographic technologies and databases are emerging as the backbone of large-scale operations management systems for industries with distributed assets and mobile workforces.

For more information, talk with your major advisor and visit the AAG's webpage at www.aag.org and their career page at <http://www.aag.org/Careers/Intro.html>.

Related -----

Internships 21

28

GRADUATE SCHOOL

Graduate school provides geography students with more options. It can help you attain a high-level position and it enables you to teach at the college level. In addition, graduate school increases your knowledge of the world, exposes you to new ideas and theories, provides you with the opportunity to work with the best and latest geographic technology, and offers you the chance to work closely with professors on research topics.

As you think about careers that you might want to enter, you should think about whether graduate school is a part of your long-range plan. Talk it over with others and your faculty. If you decide to pursue graduate school, here are several steps and considerations to selecting an appropriate graduate school.

1. What type of geography interests you? Being interested broadly in geography is great, but this will not help you in graduate school. Pick a subfield that greatly interests you, and I am not referring to the broad categories of physical or human geography. Select a type of human geography like ethnic, political, social, urban, etc. One should even be thinking more narrowly than that.
2. Talk with your major advisor by the end of your junior year, even if you do not plan to attend graduate school for several years.
3. Read the literature, especially the recent literature, of your chosen subfield. What articles or books most impressed you? If the authors are professors, where do they teach? You should consider those universities.
4. Look at the AAG's Guide to Geography Departments (we have a Department copy in C-215) and pay particular attention to department specializations and the specializations of individual professors. Add these to your list.
5. Look at the home pages of the universities on your list. What do they have to offer that interests you? Check out faculty web pages. Go back to Step 3 and read the literature of other professors that you have added to your list.
6. Talk with the faculty that you would like to work with. Perhaps start with an e-mail, but do not just lavish them with praise. Give them specific details about their research that you liked. Ask them questions that derive from their work. If they answer you, reply with a thank you e-mail and state that you would like to come out and look at the department as a possible location for graduate school.
7. Most graduate schools require that you take the GRE or another entrance examination. Your scores must reach a certain level. Think about taking it twice to get the best scores possible.
8. High grade point averages and examination scores increase your likelihood of admission to a graduate program, but contacts and letters of recommendation are also important.
9. You should select a few potential graduate schools based on a careful analysis of your academic interests and abilities and the university's reputation, expertise, and cost. Apply to at least two or three universities. Choices narrow down quickly as one gets an offer with a teaching assistantship while others offer no funding.

Related -----

Letter of Reference 29

LETTER OF REFERENCE

Faculty frequently write references for students, and we like to be as supportive and individual as possible. In addition to your assignments and grades, it helps us produce a timely letter if you complete the department's "Letter of Reference" form. A copy is provided below, but it is also available from the department secretary in C-215.

LETTER OF RECOMMENDATION REQUEST FORM

Your Name: _____

Job/Award Title: _____

Job/Award Description (supply a copy of the description or write below): _____

Contact (provide a name of the person you would like me to address the letter to): _____

Contact's address:

How long have I known you?: _____

Which of my courses have you taken and what were your grades?

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

What qualifications would you like me to mention in the letter?
