

**ADVISING HANDBOOK FOR
GEOGRAPHY MAJORS:
THINKING ABOUT CAREERS,
CONCENTRATIONS AND GRADUATE SCHOOL**

SALEM STATE COLLEGE

2004-2005

Introduction

Geography is the study of the spatial distribution of the environment and of human activity across the surface of the Earth and its atmosphere. Key areas of study in geography include: human/environmental relationships, environmental systems, human spatial organization, transportation and mapping (geo-spatial information systems or GIS). The department's graduates are in strong demand in the Massachusetts' and national economies.

Almost all students who attend Salem State College are focused on career preparation. The Department of Geography recognizes this strong student interest, but also believes that the function of a college education is to prepare each student to become a life-long learner and an educated person. Thus, we offer a broad range of learning experiences, because today's student will most likely change careers several times before his/her retirement.

The Department of Geography at Salem State College offers the following degree programs and concentrations for undergraduates:

Bachelor of Arts in Geography
Bachelor of Science in Geography
Bachelor of Science in Cartography and GIS
Bachelor of Science in Geography-Environment Concentration
Bachelor of Science in Geography-Natural Resource Management Concentration
Bachelor of Science in Geography-Regional Development and Planning Concentration
Bachelor of Science in Geography-Travel and Tourism Concentration

The purpose of this Advising Handbook is to help the student decide which of these programs or concentrations would be most appropriate given his/her career interests. The student should look over this entire handbook before meeting with the department chair, or other faculty members, to discuss the options available. To enter one of these programs or concentrations, the student will need to file a "declaration-change of major-concentration" form, signed by the department chair, with the Registrar's Office. The department chair will also assign a faculty advisor to the student.

Students majoring in other departments are invited to minor in: geography, cartography and GIS, and natural resources management. These minors require either five or six courses in geography. To enter one of these minors, the student will need to file a "declaration of minor" form, signed by the department chair, with the Registrar's Office. The department chair will also assign a faculty advisor to the student.

The “flow sheet” for each degree program and concentration describes the graduation requirements in combination with additional requirements contained in the College’s Undergraduate Catalogue. Copies of the flow sheets can be obtained at the Department of Geography office in Room 326 Meier Hall. They can also be downloaded from the College’s website.

All geography and cartography/GIS majors must take the following four courses as core requirements: GGR 105, Introduction to Geography; GGR 110, World Regions; GGR 150, Maps and GIS (or GGR 241, Cartography); and GGR 205, Geographic Research. GGR 205 should not be taken until after the completion of two other geography courses. In addition, all majors must take one course in physical geography and one course in human geography. Each flow sheet provides ways in which the requirement for these two courses can be met. Each concentration also has specific required courses, as well as elective courses. The student is reminded that he/she cannot take more than 55 credit hours in geography out of the 126 hours of course work required for graduation. This includes any geography courses taken to meet the laboratory science sequence requirement on the left side of the flow sheet.

Thinking About Careers: Selecting a Degree Program or Concentration

The Department of Geography at Salem State College has the largest undergraduate program in New England and is recognized nationally for the quality of its programs. The department is particularly strong in geo-spatial information systems (GIS) and remote sensing, and all majors must take an introductory course in this computer-based technology. While many of our international student majors come to Salem State College as freshmen specifically to major in geography or cartography/GIS, most American students discover the major after they have arrived on campus. Transfer students are often attracted to Salem State College by our concentrations in travel and tourism and regional development and planning. Students who are just starting to think about possible careers should take advantage of the website, library, testing programs and career counseling available at the Office of Career Services, located in the Ellison Campus Center.

The Department’s bulletin boards include information on the wide range of careers that geography majors can qualify for after either earning a bachelor’s degree from Salem State College or completing a graduate level degree program. Additional information that will help the student select possible careers based on their interests can be found at the following two websites: www.aag.org and www.geog.okstate.edu. The Department’s website, www.dgl.salemstate.edu, provides links to these two sites and also to many sites that contain job listings. The alumni page at this site has links to companies that have employed graduates of the department. Each degree program and concentration offered by the Department of Geography has been designed to help the student prepare for a career related to geography.

Over one-third of all geography majors will go on to graduate or professional school within four years of their graduation from Salem State College. As students think about careers they might want to enter, they should also be thinking about whether or not graduate school should be included in their long range planning. We encourage students to take a long-term perspective when choosing a degree program or concentration in geography. Students are encouraged to discuss their career interests with the department chair and other faculty members.

This Advising Handbook contains information about careers that can be prepared for with a major in geography or cartography/GIS and the Department's career oriented concentrations at both the undergraduate and graduate school levels of education. This should help the student select the degree and concentration option offered by the department that best meets his/her interests. This information should also help the student in course selection during the advising period.

The Department of Geography has a student club, the Salem Geographical Society. The club offers a variety of field trips and programs each semester, including a student and faculty lunch. Students are encouraged to attend regional and national geography and GIS/remote sensing meetings. The Department has a chapter of Gamma Theta Upsilon, the international honor society in geography. Membership is by invitation and is based on academic performance. The Department also has an annual awards program that recognizes superior academic performance and service to the College and the Department, and includes the John L. George Memorial Scholarship that is given to a student entering his/her senior year.

Degree Programs and Concentrations

The Bachelor of Arts in Geography and Bachelor of Science in Geography

The Bachelor of Arts (BA) in Geography and Bachelor of Science (BS) in Geography programs have been designed for students seeking a second major or a minor in another department while at Salem State College. The BA program requires the completion of 12 hours in a foreign language and provides flexibility so that the student can participate in study abroad programs or complete a second major or a minor that also offers the BA degree, such as a foreign language.

Many of the students seeking the BS degree in geography will also be completing a second major in education. Geography is an excellent major for students who are planning to teach at the middle or high school levels. Students majoring in programs such as business, nursing, social work, criminal justice or a BS degree program from another

department in the School of Arts and Sciences should also consider the BS program in geography as a second major or as a minor. Geography BA/BS majors are encouraged to take GGR 320 GIS and GGR 420 Quantitative Geography as electives.

The BA and BS programs are also intended for students who know they will attend graduate or professional school after graduation from Salem State College. These programs offer flexibility in course selection so the student can personalize his/her studies and best prepare for the particular type of graduate school they wish to attend. Many of our graduates go on to graduate school in geography or cartography/GIS. Geography BA/BS majors should work closely with his/her faculty advisor when selecting courses.

Geography is also an excellent major to prepare for graduate school in law or business. From time to time, geography majors also go on to schools of public health or schools of international diplomacy. Undergraduate preparation for any of these graduate level programs requires careful course selection, both within geography and from other departments on campus. Students planning to enter graduate level programs in city and regional planning, landscape architecture, natural resource management, cartography/GIS or hotel administration should select the appropriate concentration or the Bachelor of Science in Cartography and GIS described in greater detail below. Only students who plan on having a second major, or a minor, in another department or who plan to attend graduate or professional school after graduation from Salem State College should select the general BA or BS programs in geography.

Bachelor of Science in Cartography and GIS

Salem State College geography department offers a separate BS degree in cartography and geographic information systems (GIS). The department also offers a masters degree in this field. The department's Digital Geography Laboratory is one of the largest GIS facilities at any college or university in the United States. Graduates of this program receive among the highest salaries of any graduates of Salem State College. Unlike many high tech and information technology fields, employment opportunities in GIS and remote sensing have remained very strong through the recent recession. Many international students attend Salem State College specifically to enroll in this program, including the ARAMCO Scholars from Saudi Arabia. Graduates of this program obtain employment at GIS and remote sensing software and applications firms, engineering companies, municipal engineering departments, utility companies, state agencies and federal mapping, homeland security and intelligence agencies.

Students in this degree program often have a second major (or minor) in geological sciences, biology, computer science, mathematics or criminal justice. Students seeking the highest paying jobs after graduation will include calculus, finite mathematics, analytic geometry and computer programming among their elective courses. Elective courses in

geography should include advanced courses in GIS and remote sensing, physical geography and/or human geography. Graduate school programs in GIS, remote sensing, environmental management, geography, geology, engineering, computer science and criminal justice are all options, depending on the student's interests and course selections.

Bachelor of Science in Geography-Environment Concentration

This concentration is for students who are very interested in physical geography and environmental studies. The concentration also includes courses in GIS, remote sensing, statistics and soils as well as elective courses in biology and/or geology. This would be an excellent concentration for students seeking careers with environmental organizations or government agencies or who are planning to attend graduate school in physical geography, meteorology, law, landscape architecture or public health. Students should pick elective courses with these career options in mind. Courses in writing, communications and photography may also be useful. Students may wish to double major, or minor, in biology, geological sciences, chemistry, communications or art.

Bachelor of Science in Geography-Natural Resource Management Concentration

This concentration is intended for students who plan a career in natural resource management and planning. Environmental organizations, natural resource management agencies and engineering companies are places where graduates of this concentration would seek employment. This concentration provides preparation for graduate level programs in natural resource management, environmental planning, landscape architecture and the law. The student should select elective courses that will support his/her desired career direction. Possible minors include: political science, economics, biology and geological sciences. Required courses include GIS, remote sensing, land use planning, physical geography and natural resource management courses. Also required are ECO 319 Environmental and Natural Resource Economics and PHL 224 Environmental Ethics. Majors are encouraged to take GGR 420 Quantitative Geography as an elective.

Bachelor of Science in Geography-Regional Development and Planning Concentration

This concentration prepares students to enter careers in both the private sector and in government. Students are strongly encouraged to take GGR 374 Transportation Geography, GGR 420 Quantitative Geography and at least one physical geography course as electives. Depending on his/her interests, the student should consider a minor in business, criminal justice, economics, social work, political science, sociology or urban studies. This concentration (when combined with courses in other departments) provides preparation for careers in real estate development, business location analysis, city and

regional planning and public administration. Graduates of this program have been very successful in the job market. This concentration, with appropriate course selection, can also prepare students for graduate and professional school programs in: business, law, real estate, city and regional planning, public administration, landscape architecture and human geography.

Bachelor of Science in Geography-Travel and Tourism Concentration

This concentration is for students who wish to enter careers in the travel industry or in tourism development. All students in this concentration should take GGR 374 Transportation Geography and either GGR 100P Weather and Climate or GGR 101P Physical Geography I as elective courses. Students interested in taking courses on SABRE software or in hospitality should register for these courses at North Shore Community College, but credit for these courses may not transfer to Salem State College. Depending on the student's interests and career goals, the department offers a wide range of courses in sustainable development, planning, cultural geography and regional geography to take as electives. Many students in this concentration select a minor in one of the following subjects: business; sports, fitness and leisure; communications and art. Those students who go on to graduate school from this concentration usually enter schools of business or hotel administration.

The Left Side of the Flow Sheet

Students who begin their college experience at Salem State spend most of their first two years focused on meeting the requirements of the left side of the flow sheet, where the College's graduation requirements outside of the major are outlined. Most transfer students also need to take several courses to meet these requirements. While many of the courses on the left side of the flow sheet are pre-assigned, there is some flexibility for geography majors in meeting the laboratory science requirement and a great deal of flexibility in the distribution electives. The exceptions to this statement are that those geography majors who wish to have a second major in business, criminal justice, nursing, education or social work will have almost no freedom in selecting courses on the left side of the flow sheet and may need to take over 126 credit hours to complete both majors.

Geography majors who are enrolled in the Environment or Natural Resource Management concentrations are encouraged to meet the laboratory science sequence requirement in biology, chemistry or geological science. Cartography/GIS majors should consider the weather and climate and physical geology laboratory science sequence, the physical geography sequence or the geological science sequence. BA/BS geography majors and those in the other concentrations should consider the weather and climate and physical geology laboratory science sequence or the physical geography sequence.

The distributive requirements provide the opportunity to explore interests when a student is unsure of what major that he/she should choose. However, meeting these requirements through careful course selection can give the student a head start toward a specific career objective as well provide the broad education background this requirement envisions. Before meeting with your academic advisor, think about the course choices available that interest you and satisfy these distributive requirements. Be sure to review the requirements section of the SSC Undergraduate Catalogue to make sure that courses you want to take actually meet the graduation requirements. Geography majors in the BA/BS programs and in the BS concentrations are encouraged to take at least one mathematics course under Division II, preferably MAT 108 Finite Mathematics. Students majoring in the Cartography/GIS degree program, students with a second major or a minor in one of the sciences and those students who are thinking of working at an engineering company after graduation are strongly encouraged to take MAT 220 Calculus I and MAT 205 Analytic Geometry under Division II requirements.

Study Abroad

The Department of Geography encourages its majors to participate in the College's Study Abroad program, take courses in a foreign country through the Department of Foreign Languages or take a course as part of the Geography department's foreign travel program. The College's Study Abroad program provides the opportunity to spend a semester or year at a university in a foreign country and have the credits transferred back to Salem State College. Opportunities to study abroad are available in several European and Latin American countries. Geography majors who are not fluent in a foreign language most often study at the geography department at Oxford Brookes University in Oxford, England. Information on Study Abroad programs can be obtained at the Center for International Education on the South Campus.

The Department of Foreign Languages at Salem State College offers students the opportunity to study foreign languages and literature with department faculty in Europe, Latin America and Quebec during a semester or summer session. Information can be obtained from the Department of Foreign Languages in Sullivan Hall or at the Center for International Education.

The Geography department offers a trip to Europe every spring break and occasionally offers summer session courses that include travel in Europe. These trips and courses provide the opportunity to visit and study in Europe at relatively low cost. Information can be obtained from the Geography department chair.

Internships and Employment

The department strongly encourages each student to have an internship. The internship provides employment related to his/her course of study and may be paid or unpaid. Many interns are offered full-time employment upon graduation from the place where they had their internship. The best time to take an internship is during the summer between the junior and senior year or during the senior year. Faculty members at the department maintain ties with businesses, organizations and government agencies that provide internships and paid employment. Normally, a student should take GGR 409 Placement Seminar (a one credit course) if he/she wants to receive course credit for his/her internship under GGR 410 Internship. GGR 409 is focused on career evaluation and the job application process and may not be offered every semester.

A special opportunity at Salem State College is the Washington Center for Internships Program that offers a full semester internship with an organization or federal agency in Washington, DC, and also provides housing at George Washington University and financial support. Students in the travel and tourism concentration may want to consider a semester long internship at Walt Disney World in Orlando. Information on the Washington Center and Walt Disney World internships can be obtained at the Office of Career Services in the Ellison Campus Center where Ms. Ellen Zold is the internship coordinator.

Faculty members can help students obtain employment information related to their course of study, even if it is not for academic credit. Information on internships and employment is posted outside Room 319A Meier Hall and is also posted at Career Services. All geography majors should visit the Office of Career Services and learn about its resources, programs and employment listings by the beginning of his/her senior year.

Thinking About Careers That Require Geography-Related Graduate or Professional School Degrees

Over one-third of recent graduates of the geography department have entered graduate or professional school within four years of graduation. Most students work for a year or two after graduation from Salem State College before pursuing further education. The most common graduate and professional programs that geography graduates go on in are: geography, cartography/GIS, regional and environmental planning, business and law. While only a few geography majors nationally go on to attend medical school, those with health interests often enter a school of public health. For students at Salem State College who are interested in landscape architecture, the geography department offers an excellent major to prepare for admission to a graduate school of landscape architecture.

Those who may be interested in graduate school should discuss this topic with their faculty advisor by the end of their junior year, even if they don't plan to attend for several years into the future. This is important for not only course selection, but also to prepare the application forms, the personal statement (of study and career objectives), letters of recommendation and portfolios that will be needed. Most graduate and professional schools require the GRE or another entrance examination. Students should plan to take the examination twice, to obtain the best scores possible. Graduate entrance examination applications are available at the Office of Career Services and examination study guides can be bought at leading bookstores. A high grade point average and a high examination score increases the probability of admission to the highest ranked graduate programs and the receipt of scholarships, assistantships and other financial aid to attend graduate school. Students should select graduate school programs to apply to following careful analysis of their academic interests and abilities and the specialization, location and bottom line cost of each potential program. Further information on each of these graduate programs is presented below.

Graduate School in Geography and in Cartography/GIS

The geography department at Salem State College is recognized nationally as having an excellent undergraduate program. Our graduates have gone on to nationally ranked graduate schools in geography and cartography/GIS. While some obtain the Ph.D. and become college and university professors, others stop at the master's degree and have careers in business, government agencies or teach at community colleges. Almost all of our graduates who are admitted to a geography or cartography/GIS graduate program receive offers of teaching and research assistantships that cover all of the costs of attending graduate school. The master's degree normally takes two years for full time students, while the Ph.D. usually takes at least five years. Most graduate school programs in geography and in cartography/GIS require the GRE exam for admission, letters of recommendation and a personal statement. In recent years, graduates of the department have been offered admission with financial assistance from graduate level geography departments that include: the University of Minnesota, Clark University, Syracuse University and Oregon State University.

The Salem State College geography department offers a MS degree program in Geo-Information Science. Admission requirements include a bachelor's degree in geography or related field, a personal statement and the results of the GRE examination. The MS-GIS degree requires completion of 37 to 41 credit hours of graduate level courses in geography, geological sciences and mathematics. The program focuses on the use of spatial information in problem solving in the geo-sciences and allied fields. Most MS-GIS graduates work for engineering firms, GIS/Remote Sensing consulting firms and for government agencies. Many students receive financial assistance from their employers to pay for tuition and fees while enrolled in this program.

Graduate School in City, Regional and Environmental Planning

Graduates of such programs are employed as program managers and directors at government planning and environmental agencies or at consulting planning and engineering companies. The University of Massachusetts at Amherst's program in regional planning is the most common destination for our students, as it usually offers research assistantships that cover all the costs of graduate school to those who are admitted. Other nearby programs (with a community development focus) are at the University of Massachusetts at Lowell, the University of New Hampshire and the University of Southern Maine. The University of Rhode Island's program has a city and town planning focus. The ACSP directory of accredited graduate planning programs can be borrowed from Dr. Ratner. It normally takes two years to complete the master's degree. The GRE exam is usually required for admission.

Graduate School in Landscape Architecture

Landscape architecture is the design of parks, gardens, public open spaces and private development sites. It requires knowledge of art, architecture, culture, history, botany, soils, GIS and construction methods. There are 30 masters level American Society of Landscape Architects (ASLA) accredited programs in the United States. A Salem State graduate should expect to take three years to earn a Masters in Landscape Architecture degree. Information on accredited graduate programs can be found at the ASLA website: www.asla.org. The nearest affordable programs are at the University of Massachusetts at Amherst, the University of Rhode Island and the University of Connecticut at Storrs. Students in either the environmental or the regional development and planning concentrations should consider this profession. In addition, they should take courses in art and biology while at Salem State. The Commonwealth of Massachusetts licenses landscape architects who practice within the state. This license requires an apprenticeship after completing the master's degree. See Dr. Goss for more information. The GRE exam is usually required for admission.

Schools of Public Health

Geography majors with a strong interest in health issues, the environment and GIS mapping should consider a career in public health. With appropriate courses at the undergraduate level, the geography major can seek a position as a public health agent in municipal or state government. Geography majors interested in a public health career should consider a second major in biology or nursing or a minor in biology. A masters degree and then a doctorate from a school of public health lead to greater levels of responsibility and pay. The only schools of public health in Massachusetts are at Harvard, Tufts and Boston universities. Dr. Susan Case or Dr. Nelson Scottgale in the Biology

Department are the College's pre-medical school advisors and should be consulted regarding course selection, graduate school entrance exams (MCAT for medical school and GRE for schools of public health) and graduate school selection. Financial aid is often available for graduate study in public health.

Schools of Law

Salem State College geography graduates go on to law school almost every year. Areas of law particularly related to geography include: admiralty law, real estate law, environmental law and planning law. The pre-law advisor at Salem State is Dr. Paul Marsella in History. In addition to completing the geography major, students should take appropriate courses in history, political science, writing and electives of interest with guidance from Dr. Marsella. He can also provide information on the required entrance exam, the LSAT. Massachusetts' residents can receive relatively low tuition rates at the University of Connecticut at Hartford and University of Maine at Portland law schools under the New England Regional Student Program. There is usually limited financial aid to attend law school. The law degree (JD) is a three-year program.

Schools of Business, Public and Hotel Administration

The master of business administration (MBA) is one of the most common graduate level degrees awarded in the United States. For students seeking a career in the business world, the MBA provides an entrance into management. The geography major is a good preparation for entering the MBA program, especially if the student takes several economics courses, introductory courses in other social sciences and a statistics course. A minor (or introductory courses) in business may also help in the admissions process. The required entrance exam for the MBA program is the GMAT. The MBA program takes two years to complete and financial aid is limited. Nearby public college and university MBA programs include: Salem State College, the University of Massachusetts at Amherst, the University of Massachusetts at Boston and the University of New Hampshire.

Schools of public administration prepare students for a career in government and organizational management, while schools of hotel administration are for people who wish to manage resorts and large hotels. Admission requirements are fairly similar to those for MBA programs, except that the entrance exam may be either the GMAT or the GRE, depending on the requirements of each university. Students interested in public administration should enroll in the regional development and planning or natural resource management concentrations in geography and may want to minor in political science, economics or urban studies while at Salem State. Many students in the travel and tourism concentration go on to graduate school in hotel administration. Nearby universities with

both public administration and hotel administration graduate school programs include: the University of Massachusetts at Amherst, Boston University and the University of New Hampshire.

Schools of International Diplomacy

The U.S. State Department recognizes twenty graduate programs in international diplomacy. The only recognized programs in New England are the Kennedy School at Harvard and the Fletcher School at Tufts. This is a two-year masters degree program that requires the GRE exam for admission. Geography majors should also take courses in history, political science and foreign languages to prepare for admission. Financial aid is limited and tuition can be expensive, even at public university programs such as Maryland and Virginia. Employment is usually with an international organization or the U.S. State Department.

Conclusion

Students should review any questions they have on the above topics with their faculty advisors, or with the department chair. Additional information is available for all of the topics covered above. This Advising Handbook was prepared by Laurence Goss, Ph.D., for the fall advising period of 2004 and the spring advising period of 2005. He welcomes any recommendations that students may have to make this more useful for future advising periods.