GEOL 442. Field Geophysics. 3 credits.
This course focuses on collection of geophysical data in the field and interpretation, analysis, and technical reporting afterwards. Case studies discussed include applications to geology, archaeology, and engineering. Students will get hands-on experience with geophysical equipment and an understanding of how and where these tools can be applied. Topics include Ground Penetrating Radar, Electrical Resistivity, Magnetism, Seismic Refraction and Total Station Data. Prerequisite: GEOL 110 or GEOL 210 or ANT 197 or consent of instructor.

GEOL 444. Topics in Geophysics. 1-4 credits.
An in-depth investigation into selected aspects of geophysics. Topics will be chosen by the instructor and students and may vary from year to year. Some common candidate issues include earthquake seismology, field survey planning and execution, geophysical interpretation theory and the geophysical underpinnings of plate tectonic theory. Prerequisite: Permission of the instructor.

GEOL 450. Geology Seminar. 1 credit.
An in-depth study of a particular problem in geology (e.g., plate tectonics, astrogeology, low-temperature geochemistry, etc.). Scientific literature will be reviewed and discussed. Prerequisite: 20 credits in geology.

GEOL 460. Hydrogeology (2, 2). 3 credits.
Basic concepts of subsurface water as a part of the hydrologic cycle. Topics include storativity and permeability in porous media, principles of flow, computer applications, groundwater exploration, and mapping and environmental aspects of groundwater. Prerequisites: GEOL 110L and two semesters of calculus or permission of the instructor.

GEOL 467. Stratigraphy, Structure and Tectonics (3, 2). 4 credits.
Examination of how stratigraphic, structural, and tectonic principles control the character and distribution of rocks. Study of principles, regional patterns in sedimentary rocks, and stresses that deform rocks are explored in laboratory and field exercises. Topics and techniques are discussed within the framework of the 1.2 billion year geologic history of the Virginia region and its connection with tectonic processes throughout the rest of the world. Not acceptable for the B.S. in geology. Prerequisites: GEOL 110L and GEOL 230.

GEOL 477. Contemporary Issues in the Geosciences. 3 credits.
As a capstone experience, this course serves as an opportunity for students to view issues of the Earth system from an Earth-based perspective. Building on previous course work in the major (physical geology, meteorology, oceanography, etc.), students will investigate such issues as global warming, population and sustainable development, and environmental ethics. Particular emphasis is placed upon the Earth's perspective from a historical viewpoint. Prerequisites: GEOL 211, GEOL 320, GEOL 367 and GEOL 377.

GEOL 489. Quantitative Methods in Geology (3). 3 credits.
An introduction to the mathematical methods and statistical techniques that are employed by scientists in the disciplines of geochemistry, geophysics, hydrology and the petroleum/mineral industry. The course provides the quantitative skills necessary to manipulate geological data.

GEOL 491. Geological Literature and Research. 2 credits.
Provides advanced instruction in literature research to meet the B.A. Earth Science and B.S. Geology research requirements. Activities include the identification of a literature-based research problem, literature research techniques, critical reading and discussion, and the preparation of individual review papers on each student's research topic. Prerequisite: GEOL 291 or permission of the instructor.

GEOL 494. Internship in Geology. 1-3 credits.
Student conducts a research or applied project in geology outside of the university. Requires an approved proposal prior to registration and a final report at the culmination of the project. Prerequisites: Minimum of eight credit hours in geology, GEOL 291 and a geology GPA of 2.5 or higher.

GEOL 497. Problems in Geology. 1-3 credits.
An undergraduate research course in one of the fields of geology. Open to advanced students who have adequate preparation. Prerequisites: GEOL 291 and permission of the instructor.

GEOL 499. Honors in Geology. 3 credits.
Three semester sequence for a total of 6 hours. Prerequisite: GEOL 291 and 3.25 GPA or higher.
linguistic and extralinguistic) and the delivery of professional documents in real-market conditions. Fulfills the College of Arts and Letters writing-intensive requirement for the major. Prerequisite: GER 300 or equivalent.

GER 400. Advanced Conversation. 3 credits. Discussions deal with topics of current interest. Prerequisite: GER 300 or permission of the instructor.

GER 405. The Age of German Classicism. 3 credits. Reading and interpretation of significant works of Lessing, Goethe and Schiller. Instruction is in German. Prerequisite: GER 300 or permission of the instructor.

GER 415. German Romanticism and Realism. 3 credits. A study of Romanticism and Realism with emphasis on Romantic poetry and the Realistic novel. Instruction is in German. Prerequisite: GER 300 or permission of the instructor.

GER 426. Modern German Literature. 3 credits. A study of the works of major German writers of the 20th century. Instruction is in German. Prerequisite: GER 300 or permission of the instructor.

GER/ENG 436. Studies in German Literature. 3 credits. A study of selected works of German literature. Instruction is in English. May be repeated for credit when course content changes.

GER 446. Special Topics in German Literature. 3 credits. Study of a particular topic in German literature. It may cover all or specific German literature genres. Course may be repeated. Prerequisite: GER 300.

GER 447. Special Topics in German Civilization and Culture. 3 credits. Students will study a particular topic in the civilization and/or culture of Germany. Course may be repeated. Prerequisite: GER 300.

GER 448. Topics in German Linguistics. 3 credits. Students will study a particular topic in German linguistics. Topics could include an introduction to German sociolinguistics and psycholinguistics. Course may be repeated. Prerequisite: GER 300.

GER 465. German Cinema. 3 credits. An analysis of the German cinema from the 1920s through the present. Emphasis will be on the relations between the German film and certain seminal periods in German history. Prerequisite: GER 300 or permission of the instructor.

Gerontology

Department of Social Work

GERN/SOCI 280. Social Gerontology. 3 credits. An interdisciplinary introduction to the study of aging. The course provides an overview of issues surrounding aging in contemporary society: personal, familial, communal and societal. Corequisite: 20 hours of community service-learning.

GERN 305. Programs and Services for the Elderly. 3 credits. An overview of the programs and services provided for the elderly in the public and private sectors of America. Observations and participation in local programs for the elderly will be required. Prerequisite: GERN/SOCI 280.

GERN/FAM/SOWK 375. Grant Writing for Agencies. 3 credits. Emphasizing active learning, this course teaches the basics of grant and proposal writing. Efficient research, persuasive prose and the importance of relationships are stressed. Private and corporate philanthropy and government grants are examined.

GERN 400. Skills and Techniques in Gerontological Assessment. 3 credits. The study of skills and techniques used in assessing the elderly client. Assessment is made from the holistic approach: physical, psychological and social. Prerequisite: GERN/SOCI 280.

GERN 487. Special Topics in Gerontology. 3 credits. Examination of selected topics in gerontology that are of current importance in the field of gerontology. Course may be repeated for credit.

GERN 490. Special Studies in Gerontology. 1-3 credits. Independent study in gerontology under faculty supervision. Limited to gerontology minors. Can be repeated for credit. Prerequisite: GERN/SOCI 280 and GERN 400 or permission of the instructor.

GERN 495. Field Experience/Seminar in Gerontology (1, 3). 3 credits. Supervised field experience in gerontology settings that allows observation and experience with the well and frail elderly. A minimum of six hours in the assigned setting each week and one hour seminar on campus. Prerequisites: GERN/SOCI 280, GERN 305 and GERN 400, major elective, and approval of the gerontology minor adviser.

School of Art, Design and Art History

All 200-level GRPH courses are limited to declared art, art history, graphic design and interior design majors during the fall and spring semesters. GRPH courses at the 300-level and above are restricted to graphic design majors. During May and summer sessions, 200-level GRPH courses are open to all students who meet the additional stated course prerequisites. Non-majors wishing to enroll in a GRPH course during fall and spring semesters may request permission of the instructor.

GRPH 200. Computer Graphics (0, 6). 3 credits. Introduction to graphics on the computer. Students will explore hardware and software that relate to the presentation of graphic design projects and computer-generated imaging. Prerequisites: ART 102 and ART 104 or permission of the instructor.

GRPH 202. Design Methodology (0, 9). 3 credits. Exploration of strategies for conceptualizing, analyzing and solving design problems. Emphasis is placed on graphic presentation of ideas and the creative process. Prerequisite: ART 102.

GRPH 206. Introduction to Typography (0, 9). 3 credits. An introduction to the study of letter forms for their aesthetic and communicative value. Typographic fundamentals of alphabet history, type classification, printing technology effects, font design, visual space, hierarchy, and grid systems will be explored. Prerequisite: GRPH 200.

GRPH 208. Portfolio Review. 0 credit. Portfolio review required to enroll in graphic design courses at upper-division standing. May be repeated once for pass/fail standing. Prerequisites: GRPH 200 and GRPH 202. Prerequisite or corequisite: GRPH 206.

GRPH 300. Illustration (0, 9). 3 credits. Through demonstrations, theory and practical application, students are introduced to numerous media and illustrative techniques. Encouraged experimentation is tempered by an understanding of problem solving and conceptualization. Prerequisite: GRPH 208.

GRPH 304. Package Design (0, 9). 3 credits. Through theory, demonstrations and practical application, students learn to design in three-dimensions. Focus will be placed on aesthetics, as well as the form and function of a product’s housing. Prerequisite: GRPH 208.

GRPH 306. Intermediate Typography (0, 9). 3 credits. An intermediate study of typography for its aesthetic and communicative value. Context effects on legibility and readability, type as image, type in sequence, and typographic systems will be explored. Prerequisite: GRPH 208.

GRPH 312. Web Design. 3 credits. Introduction to Web design through theory and practical application. Assignments will focus on the unique form, content and structures associated with designing for the World Wide Web. Special emphasis on the creative process and the graphic presentation of ideas. Prerequisite: GRPH 208.

GRPH 313. Interactive Media. 3 credits. Through theory, demonstration and practical application, students are introduced to visual interface design. Focus will be placed on digital, interactive media and bridging the gap between functionality and usability. Prerequisite: GRPH 208.

GRPH 340. Poster Design (0, 9). 3 credits. Through theory and practical application, students learn to design for the poster realm. Focus will be placed on aesthetics, as well as form and function. Encouraged experimentation is tempered by an understanding of problem solving and conceptualization. Prerequisite: GRPH 208.

GRPH/ART 375. Letterpress. 3 credits. This studio course offers students an opportunity to engage in the process and product of letterpress printing through various techniques and conceptual approaches. Instruction focuses on text and image relationships by integrating metal and wood type, and other type-high surfaces. Emphasis will be placed on the acquisition of skills and vocabulary and the creative use of type and image. The course will address the history of letterpress and its contribution to contemporary art and design. Prerequisite: ART 278; Also for GRPH credit: GRPH 208.