

WOU Earth Science Program Facilities and Technology

Faculty Office Space

Dr. Myers, Assoc. Professor of Geology, NS214, 260 sq ft, office + prep lab
Dr. Taylor, Assoc. Professor of Geology, NS210, 200 sq ft, office + prep room
Dr. Templeton, Assoc. Professor of Geology, NS 211, 260 sq ft, office + prep lab
Brown, Adjunct Instructor, Earth System Science, NS213, 100 sq ft, office
Carter, Adjunct Instructor, Earth System Science, NS012, 72 sq ft, office
Ellingston, Adjunct Instructor, Earth System Science, NS013, 72 sq ft, office
Wade, Adjunct Instructor, Earth System Science and Science Education, NS119, 135 sq ft, office + curriculum prep room

Classroom and Laboratory Space

The following lecture and lab rooms in the Natural Sciences Building are utilized by the Earth Science program at Western Oregon University.

NS101 Lecture Room, 600 sq ft, 60-seat lecture room, smart-room technology includes 2 digital projectors and instructor's multimedia station, primary use: ES104-105-106 lectures, ES201-202-203 lectures.

NS218 Geology Laboratory, 1000 sq ft, 24-seat laboratory, facilities include multi-media projection cart and class demonstration kits, primary use: ES201-202-203 labs, ES473/573, ES301/302/303, ES321, ES322, ES392, ES431, ES450.

NS216A Spatial Digitization Laboratory, 120 sq ft, cartographic laboratory, facilities include 1 PC workstation, 1 36-in large-format plotter, 1 48 x 60 inch digitizing tablet, primary use: faculty-student research.

NS218A Geodata Processing Laboratory, 300 sq ft, information systems and data analysis laboratory, facilities include 9 PC workstations, 1 color deskjet printer, 2 laserjet printers, 1 slide scanner, 1 flat-bed scanner, 1 student petrographic microscope with digital photo optics, primary use: faculty-student research, ES492, ES454, ES302/303, ES476

NS216 Natural Science Computer Lab, 500 sq ft, shared student computer lab for Division of Natural Sciences and Mathematics, 18 student PC workstations + instructor's station with multimedia projection capabilities, 1 high-speed laser printer, primary use: list classes in ES301, ES492, ES476.

- NS116, shared Chemistry and Earth System Science Laboratory, 1000 sq ft, 24-seat chemistry laboratory, equipped with glassware and reagents for wet chemistry experiments, primary use: ES105 (shared with CH200 sequence).
- NS125, Science Education Methods laboratory, 1000 sq ft, 24-seat curriculum laboratory for preparation of science teachers, equipped with 6 PC workstations, multi-media computer cart, and class demo/curriculum materials, primary use: GS113 Earth and Space Science Methods (shared with physical science and biology methods classes).
- NS122, Earth Science Equipment Storage room, 100 sq ft, storage of field equipment and rock samples for upper division Earth Science courses.
- NS012-013, Earth System Science Preparation Lab, 120 sq ft, preparation space used for demo set-up and lab experiments for ES100 Earth System Science sequence.
- NS017, Earth System Science laboratory, 1080 sq ft, 24-seat laboratory for use by ES100 Earth System Science sections, facilities include 6 PC workstations, laser printer, network connections, class demo equipment, rock and mineral specimens, and map collection, primary use: ES104-105-106 labs.
- NS018, Petrographic Analysis Laboratory, 380 sq ft, rock sample preparation laboratory used for faculty-student research and upper division Earth Science courses, facilities include 2 rock saws, sample crusher, sample sieves, and sample storage, primary use: faculty/student research and class preparation for ES450 Petrology
- NS009-NS019, Stratigraphy-Sedimentology-Paleontology Laboratory, 300 sq ft, sample preparation laboratory used for research and upper division Earth Science courses, facilities include trimming saw, sample splitter, and sample storage, research-grade binocular microscope with digital imaging capabilities, primary use: faculty/student research and class preparation for ES431 and ES392.

Additional Research and Teaching Resources

Software: ArcGIS9.x / ArcView3.3 Geographic Information Systems Software (site license), River Tools Geomorphic Analysis Suite, R2V Map Vectorization Software, Grapher graphing software, Surfer geologic mapping software, Didger vectorization software, Adobe Creative Suite (Photoshop, Illustrator, Acrobat),

Rockworks Geologic Analysis Package, IDRISI Image Analysis software, Groundwater Vistas groundwater modeling software, Microsoft Office.

Earth Science Digital Media / Data Collection: ESRI Global GIS Data Library, Earth Surface Digital Image Library, Geovideo Archive, State of Oregon Digital Orthophoto Quad Collection, air photo collection, state/national hydrologic and GIS data sets.

Internet Resources: Course-specific web-based curricular materials, WebCT online content

Other Field Equipment: Geocon Total Station Surveying Instrument, Impulse Laser Distance Measurer, set of digital and analog brunton compass pocket transits, 5 student-grade GPS satellite location systems, 5 student digital cameras, 1 digital video camera, 3 research grade GPS / data collectors, field water chemistry test kits, pH meters, dissolved oxygen meter, groundwater pressure transducer, electronic water level detector, miscellaneous field gear (measuring tapes, calipers, groundwater bailers, field thermometry, etc.)

Other Class and Lab Equipment: 4 research-grade stereoscopes, student pocket stereocopes, 6 refurbished binocular microscopes with light sources, 3 new student-grade binocular microscopes, 1 research-grade binocular microscope with digital imaging capabilities, 6 new student petrographic microscopes, 1 research-grade petrographic microscope with digital imaging capabilities, 1 student petrographic microscope with digital imaging capabilities, topographic map collection, rock-mineral-fossil sample collections.

Earth Science Library Resources: excellent interlibrary loan services; journals: Journal of Sedimentary Petrology (1981-1999), Journal of Geophysical Research: solid earth series (1991-1999), Sedimentology (1983-1999), Tectonics (1983-2000), Nature, Science, American Journal of Science, Physical Geography, Geological Society of America Bulletin, American Association of Petroleum Geologists Bulletin, Journal of Geology. The WOU library is also a depository for state and federal publications of the Oregon Dept. of Geology and Mineral Industries, and the U.S. Geological Survey.

The Earth Science book and multi-media collection dates back mainly to the 1970's-early 1980's. The majority of hard-copy library book and media

holdings for Geology/Earth Science are out of date and require an infusion of funds for upgrade. Faculty steadily make annual requests for new library purchases, but the upgrade is occurring at a slow rate, on the order of less than 5 books per year. While the library holdings in Earth Science / Geology are relatively limited compared to other regional university libraries, the SUMMIT consortium program and electronic interlibrary loan system, provides excellent capacity for faculty and student research. The advancement of internet publication resources are rapidly dissolving the barriers to accessing information in “bricks-and-mortar” libraries, including WOU.

TECHNOLOGY

The technologic hub of the Earth Science program is the Geo-Data Processing Laboratory in rooms 218A and 216A of the Natural Sciences Building. The lab currently supports nine PC-workstations, color and laser print stations, a large-format (36 inch) color plotter, a set of digitizing tablets, digital image scanners, and a collection of advanced geoprocessing-GIS software and databases (e.g. ArcGIS, IDRISI image processing, surfer/grapher, rockware, groundwater-river modeling tools, state digital map and photo data). The lab is used for student support of upper division courses, for faculty-student research, and for community development projects. Examples of the latter include compilation of spatial datasets for the Luckiamute Watershed Council, the Pudding River Watershed Council, and the City of Independence (Ash Creek Recreation Project). The GIS software initiative in the Earth Science program also served as the catalyst for a campus-wide deployment involving University Computing Services, the Student Technology Fee Committee, and the College of Education. The technology and quantitative skills developed by students in the GeoData Lab have resulted in modest success with job placement; at least six graduates have found employment as GIS specialists for private and government organizations. Information management specialists are currently in high demand in both government and industry. The need for well-trained technology specialists with a broad-based science background is expected to grow throughout the coming decades.

The Earth Science program, along with the Division of Natural Sciences and Mathematics, have greatly expanded their technology capacity in the past 6 years. Funds for this expansion were derived from internal supplies and services budgets, student lab fees, and external grant funding (e.g. WOU Student Technology Fee Committee, U.S. Dept. of Education, National Science Foundation). The following is a summary list of technology-based resources

that have resulted from these efforts: NS101 multi-media presentation technology, NS017 electronic data instrumentation, updated PC workstations (n ~ 18), software resources, surveying technology, petrographic microscopes, digital imaging systems, and mobile multi-media presentation carts.