

# CONTINUING EDUCATION OPPORTUNITY

---

## Evening\Saturday Semester Course For Entering Environmental Field

### *Introduction To Environmental Technology*

Beginning last year (Fall, 92), 93 experienced professionals recently discarded from the declining American and international oil industry assembled for the first evening of a course designed specifically to cross-train petroleum geologists, reservoir engineers and other scientists and engineers for entering the environmental field. Since that first semester, many graduates of the class have obtained jobs in the environmental field ranging from regulatory agencies to consulting companies in Texas and in other states as far away as Oregon and New Jersey.

The course was designed and produced by Michael D. Campbell, P.G., P.H., Corporate Hydrogeological Consultant and former Regional Technical Manager and Chief Hydrogeologist for DuPont Environmental Remediation Services, Inc., based in Houston, Texas. Mr. Campbell, with more than 27 years of professional experience in the environmental and mining fields, is widely known for his work (including the text published by the Houston Geological Society in 1977: *Geology of Alternate Energy Resources*, as well as the text published by McGraw Hill: *Water Well Technology*) and other publications and contributions to hundreds of geologic, hydrogeologic, and environmental investigations in the U.S. and Australia, Africa, India, and Scandinavia. As a graduate of The Ohio State University and Rice University during the 1960s and 1970s, he was strongly influenced by mentors such as Dr. Wayne A. Pettyjohn, Dr. John Rodgers, Dr. King Hubbert, and many others who encouraged him to contribute to the technical information base of the fields. The course was an outgrowth of the many short courses he has either supported, arranged, or presented over the last 15 years.

Held on the campus of the North Harris College, the course is presented on

Tuesdays and Thursdays from 7:00 to 10:00 P.M., and on Saturday from 8:00 A.M. to 2:00 P.M. for approximately 220 lecture and laboratory hours over the semester. Although Mr. Campbell is the principal lecturer and sets the tone of the course, he brings in guest lecturers to provide coverage of special topics such as on health and safety, environmental chemistry, as well as a range of perspectives presented by industry leaders drawn from the Houston area and from surrounding states. Representatives of DuPont (Rae Eklund, CIH, Dr. Bill Hitchcock, Dr. Ted Foss, P.G.), ERM-SW (Richard Bost, P.E., Gary Donnan, P.G., Angela LeVert, P.E., and others), ENSR Consulting and Engineering, Inc. (Carl Brassow, P.E., Chris Boyce, P.G., Dr. Chi-Chung Chang, P.G.), Eviron (Dr. Ben Thomas, Dr. James Howard, P.G.), Law Engineering, Fugro McClelland, Techsas, Inc. Others have also contributed materially to the success of the course (James Grace, P.G., Nancy Alyanak, P.G., William Feathergill Wilson, P.G., W.K. (Kelly) Summers, P.G. and Dr. Herb Ward, Rice University, and Dr. Wayne A. Pettyjohn, P.G., Oklahoma State University).

The treatment sequence of the topics covered during the course was designed to introduce the participant to the realities of the environmental field. Each class begins with class discussions over a period of 15 minutes on "what's new" in the local and national press on local and national environmental topics. These are pursued by the students as regular homework assignments, as Mr. Campbell, and guest lecturers, comment or stimulate point and counter-point discussions. The main lecture of the evening follows.

The first few weeks of the class are spent with lectures on state and federal regulations, the reasons for the existence of the environmental field and for the associated employment with billions of

dollars being spent in the field each year. The principal objective of the course is to prepare the individual for getting a job in the field. To accomplish this, the individual must know the salient features of the regulations that drive all environmental projects. The "where, what, when, how, and even why" of the regulations must be understood if the individual is going to be useful to a prospective employer, whether geologist, geophysicist, engineer, chemist, accountant, or other professional (astronomer, physicist, landperson, etc.). After the regulations have been introduced and discussed in some detail, the principal elements of the field are presented. This includes coverage of health and safety issues that surround the entire environmental field. When dealing with society's waste products, exploration activities are potentially dangerous and the course is set on a foundation of health and safety instructions. This is followed by an introduction to the basic elements of environmental chemistry, both inorganic and organic chemistry in context with EPA protocol concerning sampling and data analysis.

Because ground water is the essential target of all concerns of subsurface contamination in this country, the subject of hydrogeology is treated in considerable detail, for the benefit of both geologist and engineer as well. This is done with forethought on the basis that a good knowledge of a subject encourage some to pursue and others less brave to stay home. Ground-water flow net analysis, aquifer testing, drilling demonstrations, site assessment procedures, ground-water modeling, ground-water statistics and problem solving are all part of the coverage. Monitoring wells have been drilled and completed for use by the class members to practice taking ground-water level measurements, conducting pumping tests and slug tests for the purpose of learning



to characterize the subsurface in terms of environmental requirements (and regulations).

As the elements of the field are covered, topics such as conceptual engineering, remedial assessment, equipment selection, system design, and project management are introduced in terms of how the elements come together to create a system designed to clean-up the mess. During this period, field trips are made to visit selected Superfund sites around Houston. TNRCC and EPA personnel present special lectures on topical subjects of interest, including a special lecture on air quality control.

A takehome midterm examination is given to the class to test the individual's ability to look-up or locate required information. Class presentations are made during the latter part of the course to familiarize the individual as well as the class with classical technical ideas and technology developments. This is a timed exercise not to exceed 20 minutes in length. At the end of the course a "Hazardous" session is conducted to meet the requirements for 40-hour certification, which is required of all individuals who may work in the field. The final exam is given on the last day of the course, after which class

pictures are taken to document the occasion.

The individual is scored according to the following weighted average.

If an individual meets all attendance and other requirements, course completion certificates will be awarded. Those of the 10 top ranking will receive special recognition on their certificates. The 40-hour certificate will also be presented, if the individual meets all requirements. The cost for the semester is \$500, plus books and Hazwoper costs. For further information on next semester's registration, leave your name, address and telephone number on Call Notes: (713) 440-7665.



## Computer Courses for Geoscientists

**EDS offers on-site training courses tailored to your specific needs - -**

- **Geologic and Well Log Data Management**
  - Well Log Analysis with Personal Computers
  - The Art and Science of Computer Contour Mapping
  - Basic and Advanced TerraStation™ Training
- **Geosystems Computing from a Management Viewpoint**

In addition we offer technical support at the system and software level. Please call EDS to discuss details, current rates and availability.

### Energy Data Services, Inc.

98 Inverness Drive East #170, Englewood,  
Colorado 80112  
(303) 799-0433 - Fax (303) 799-0621

## Understanding Federal Environmental Laws and Regulations

Lawyer James Blackburn, a specialist in environmental law, will explain federal environmental laws and regulations to civil, chemical and environmental engineers, chemists, consulting engineers, government officials, business managers, compliance personnel and staff attorneys seeking training in environmental law. Mr. Blackburn will pay special attention to recent amendments to the hazardous waste and superfund programs, proposed amendments to the Federal Clean Air Act and their implications for future compliance. Other topics include the Federal Clean Water Act, the National Environmental Policy Act, the Endangered Species Act, hazardous waste and hazardous materials requirements, federal wetlands law, and water law.

When: Wednesday-Friday, December 1-3, 1993, 9:00 a.m.- 5:00 p.m.

Fee: \$545 (\$495 per person for each additional registrant from the same company).

Where: Rice University campus.

For more information and a free brochure call the Rice University School of Continuing Studies, (713) 520-6022.

## Continuing Education

The Department of Geoscience of the University of Houston is pleased to announce the following courses for the Spring 1994 semester:

GEOL 3101	Big Bend Field Trip	TBA
GEOL 3378	Intro Atmospheric SCI	10-11:30 a.m. TTH
GEOL 4397	Intro to Earthquakes	4-5:30 p.m. MW
GEOL 6341	Geochemistry I	5:30-7 p.m. TTH
GEOL 6344	Stable Isotopes	5:30-7 p.m. TTH
GEOL 6397	Advanced Hydrogeology	5:30-7 p.m. MW
GEOL 6397	Tect & Sedim Basin of So. America	7-8:30 p.m. MW
GEOL 6339	Igneous Petrology	7-8:30 p.m. MW
GEOL 6397	Seismic Data Acquisition	7-8:30 p.m. MW
GEOL 7320	Seismic Velocity	7-8:30 p.m. TTH
GEOL 7330	Potential Field Methods	5:30-7 p.m. MW
GEOL 7335	Geophysical Interpretation	5:30-7 p.m. TTH

Registration for these courses is scheduled for early Jan. 1994. For more information contact Cassandra Heavrin - 713-743-3401.

## Midland Valley Associates Inc.

Announces toll free sales and technical support  
In USA 48 states 1 800 482-2001

### Balancing

Ask about 3 - D

**Paleotectonic Restoration Software - Consulting with BSP or Tectonics CAM**

*New!*

### Tectonics CAM

Put geology back into seismic interpretation