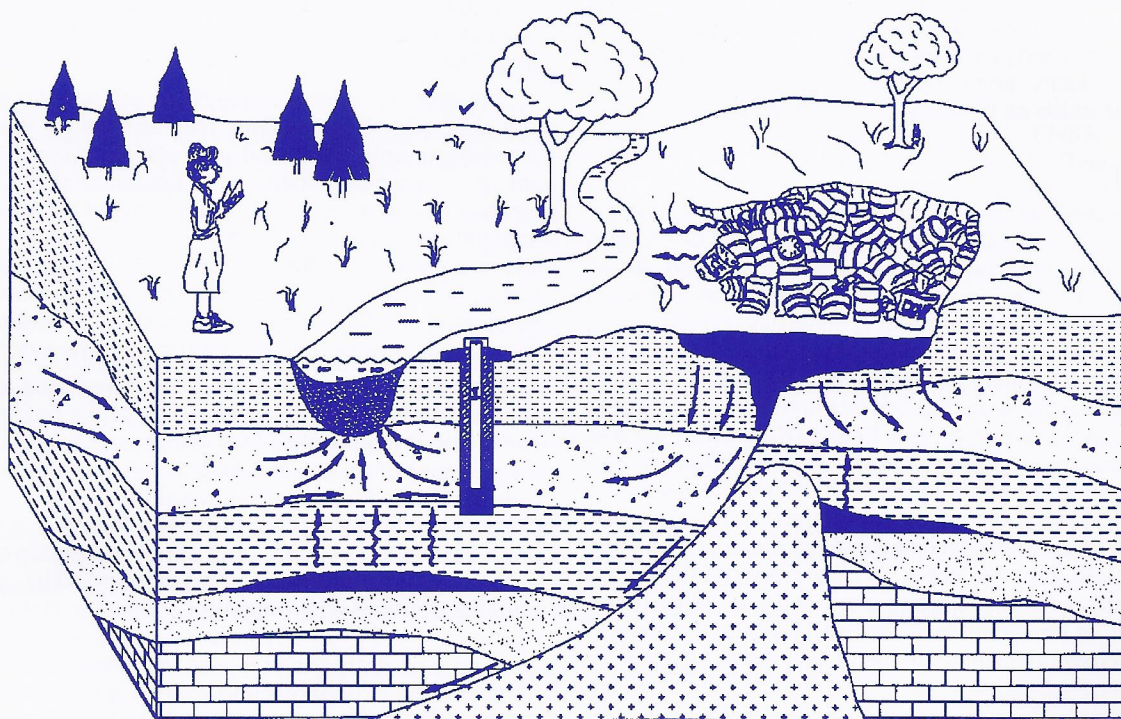


**7th
Edition**

Introduction To Environmental Technology™



- **Designed for Geologists, Geophysicists, Chemists, Engineers Technicians and others**

**INSTITUTE
of
ENVIRONMENTAL TECHNOLOGY™**

"Technical Training For The Future"

- **Since 1992 • Industry Sponsored • Cost Effective**
- **40 Hr-HAZWOPER Certification • Convenient Schedule**

Fall-1995 SEMESTER

ENVIRONMENTAL CROSS TRAINING

Registration Opens: July 1, 1995
Scheduled Class Starting Date: September 5, 1995

INTRODUCTION TO ENVIRONMENTAL TECHNOLOGY™

Principal Instructor
Michael D. Campbell, P.G., P.H.
Senior Consultant to Industry

Primary Lecturers

Rebecca A. Eklund, C.I.H.,
Compliance Solutions, Inc.

Richard C. Bost, P.E.,
ERM-Southwest

William S. Hitchcock, Ph.D.
DuPont Environmental

Guest Lecturers

Gary T. Donnan, P.G., ERM-SW
Ben A. Thomas, Ph.D., ENVIRON
Dick Flannery, Ph.D., TNRCC
George Losonsky, Ph.D., IT Corp.
Angela LeVert, ERM-SW
Tom Whitehurst, P.G., ERM-SW
H. C. Clark, Ph.D., Rice University

Carl T. Brassow, P.E., J.D., Consultant
Dick Woodward, Sierra Services
Curt Stanley, P.G., Shell Oil
Nancy Toole, Consultant
Nancy Worst, TNRCC
Steve M. Hamm, TNRCC
C. C. Chang, Ph.D., Dow Environmental

Ted H. Foss, Ph.D., P.G., DuPont
Chris Boyce, P.G., ENSR
John Dickinson, P.E., Team Environmental
Tom Liebert, P.E., DuPont Environmental
Donald A. Flory, Ph.D., Consultant
Robert M. Graziano, Consultant
Michael Solomon, Argo, and others

COURSE OBJECTIVES

The course is designed to provide technical training for those scientists and engineers of the oil & gas industry, the aerospace industry, and other industries experiencing downsizing and reorganization, who wish to make a career change, or for other individuals who wish to establish or improve basic technical skills in environmental regulations, investigations and clean-up. The course is structured to also cross-train other highly motivated individuals who have an interest in the environmental field. A college education is a suggested prerequisite. Seventh semester given since inception. Financial support may be available.

Students will receive approximately 180 hours of instruction, including hands-on demonstrations involving: field techniques, equipment use and field trip(s) to Houston-area Superfund remediation sites. HAZWOPER (40-Hr OSHA) certification. Since Fall 1992, almost 400 men and women have completed the program, most of whom have found employment in the field. Call to receive detailed information on the training program. Class size limited to 50 students. Register early to reserve your place.

EXAMPLE OF TOPICS TO BE COVERED

- | | |
|---|--|
| ✓ Environmental Laws and Regulations | ✓ Health & Safety Strategies & Requirements |
| ✓ Environmental Chemistry | ✓ Site Characterization and Assessment |
| ✓ Surface & Borehole Geophysics | ✓ Sampling Protocols, Techniques & Methods |
| ✓ Hydrogeology, Aquifer Testing & Modeling | ✓ Contaminant Transport & Modeling |
| ✓ Remedial Case Histories | ✓ Risk Assessment & Clean-up Criteria |
| ✓ Conceptual Engineering & Methods | ✓ Remediation Engineering & Innovative Methods |
| ✓ Interview Preparation & Placement Counsel | ✓ Project Management & Professional Ethics |

Course Information

Lecture times:	Tuesdays & Thursdays - 7:00 - 10:00 p.m.; Laboratories/Lectures on Saturdays - 8:00 a.m. - Noon+
Location:	Institute of Environmental Technology, 2537 South Gessner, Suite 102-105, near Westheimer.
Course Fee:	\$1,675.00, which includes all fees, texts & course materials. Financial support available to qualified persons.
Registration:	Send payment for: \$1,675.00 to: United Resources International, Inc. Submit completed registration form to register. 17419 Sandy Cliffs Drive Additional Information: (713) 440-7665 Fax: (713) 583-9730 Houston, Texas 77090

Fall, 1995 Registration

Environmental Training Means Jobs For Geologists, Scientists, Engineers & Others

An Evening & Saturday, Semester-Length Course Designed for Entering & Advancing in the Environmental Field.

Beginning in Fall, 1992, ninety-three experienced geologists, engineers, chemists and geophysicists recently displaced from the downsizing domestic oil and gas, aerospace and other industries, assembled for the beginning of the inaugural semester of the course: Introduction to Environmental Technology™. The course was conceived and designed specifically to cross-train professionals wishing to make a career change to the environmental field. Since then, environmental professionals, as well as recent graduates, also have been attracted to the course to broaden their industrial training and awareness of current issues within the environmental field. Since that first semester, graduates of the class have obtained jobs in the environmental field with regulatory agencies, industry, and consulting companies in Texas, Arkansas and other states as far away as Washington and New Jersey.

COURSE ORIGINS

The course was designed and is 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. and other environmental engineering consulting companies in Houston. Mr. Campbell, with more than 28 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. A graduate of The Ohio State University and Rice University, Mr. Campbell developed the course as an outgrowth of the many short courses he has supported, arranged, or presented over the last 15 years, in cooperation with his extensive network of industry, university, and regulatory associates.

COURSE HISTORY

Held on the campus of the North Harris College for the first three semesters, beginning with the Spring, 94 semester, the course was moved to a more central, metropolitan location. The Houston Engineering and Scientific Society (HESS) successfully hosted the environmental program for two semesters. In early 1995, the **Institute of Environmental Technology™** was formed to accommodate the needs of the training program and to provide dedicated facilities for the Institute's expanding training program planned for 1995. The Institute was also formed to provide the faculty, graduates and students of the course with a continuing forum for dialogue and industrial research and investigation on present and developing environmental technology.

COURSE DESIGN

Mr. Campbell is the Principal Instructor and sets the tone of the course. Primary and guest lecturers provide coverage of special topics such as health and safety, environmental chemistry, as well as a range of perspectives by industry and gov-

ernment leaders from the Houston area and other parts of the U.S. Field trips and hands-on demonstrations of various activities and equipment are supervised by experienced personnel working in the environmental field.

The 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 on "what's new" in the local and national press on environmental issues. These issues are monitored by the students as regular homework assignments, as Mr. Campbell and guest lecturers comment or stimulate point and counter-point discussions. The main lecture(s) of the evening then 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 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 obtaining employment in the environmental 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.

After the regulations have been introduced and discussed in some detail, the principal elements of the field are presented over the next few weeks. This includes coverage of health and safety issues that are involved in all environmental projects. When dealing with society's hazardous wastes, exploration activities are potentially dangerous and the course is based on a sound foundation of health and safety education to prepare the student for such conditions. This is followed by an introduction to the elements of environmental chemistry. Both inorganic and organic chemistry are covered in context with EPA protocol on sampling and data analysis and validation. Because potential contamination of underground water supplies is of primary concern by EPA and the general public in this country, the subject of hydrogeology is treated in considerable detail.

After discussions have been completed on the fundamentals of the field procedures used in assessing the horizontal and vertical extent of contamination, topics such as conceptual engineering, remedial assessment, equipment selection, system design, and project management and environmental marketing are introduced in terms of how the field procedures come together to create a system designed to remediate (or clean-up) a contaminated site. During this part of the course, a field trip is made to visit selected Superfund sites around Houston. In addition, TNRCC personnel present special lectures on topical subjects of interest, including air quality control, permitting, technology development and management.

Near the end of the course, a "Hazwoper" Saturday session is conducted to meet the final requirements for 40-hour OSHA certification, which is required of all individuals who wish to work in the environmental field. In final preparation for beginning the search

for employment, job search and interview techniques are discussed by recruiting personnel and senior management consultants.

COURSE/STUDENT FLEXIBILITY

The individual student has the option to compete for class ranking by being scored according to weighted average criteria. If an individual meets all testing, attendance and other requirements, course completion certificates will be awarded. Those of the 10 top ranking will receive special recognition on their certificates. The OSHA 40-hour certification and CEU's will also be awarded, if the individual meets all requirements.

The course is designed to fit into an individual's busy work-day schedule. Homework consists of assigned readings of hand-outs and selected sections of course textbooks. When the course is finished, the graduate will have filled 3 to 4 three-ringed notebooks with course materials, all for future reference.

ENVIRONMENTAL INDUSTRY SUPPORT

Technical personnel supporting the course include industry representatives such as:

DuPont Environmental

Dr. Bill Hitchcock, Dr. Ted Foss, P.G. Tom Liebert, P.E.

Compliance Solutions, Inc.

Rae Eklund, C.I.H., Karl Leger

ERM-Southwest

Richard C. Bost, P.E., Gary Donnan, P.G., Angela Levert, James Weishuhn, P.E., Tom Whitehurst, P.G., Guy Swinford, P.G., B.C. Dr. Robinson, etc.

ENSR Consulting and Engineering, Inc.

Chris Boyce, P.G.

ENVIRON Dr. Ben Thomas

IT Corporation Dr. George Losonsky, P.G.

Dow Environmental, Inc. Dr. Chi-Chung Chang, P.G.

Argo Environmental Training & Consulting,

Michael Solomon

Shell Development Company Curt Stanley, P.G.

Fugro Environmental, James Thomson, P.G.

COURSE REGISTRATION

Pre-registration for Fall semester begins July 1st and will continue until course capacity has been reached. Classes are now scheduled to begin September 5th, 1995 at The Institute of Environmental Technology located in the Westlake II Building, 2537 South Gessner, Suite 102. Class size is limited to 50 students, so early registration is recommended. If course capacity has not been reached by September 4th, the starting date will be rescheduled for September 19th. Call for starting date.

For further information on registration, starting date and on the financial support and scholarship programs, call (713) 440-7665, or return a completed Registration Form with your payment to reserve your place in the Fall semester course. Additional course information and registration forms are also available in the lobby of The Institute of Environmental Technology on South Gessner, near Westheimer.

Team Environmental

John Dickson, P.E., Steve Zarvos, P.E.

Texas Natural Resources Conservation Commission (TNRCC)

Dr. Dick Flannery, Steve Hamm, Nancy Worst

Carl Brassow, P.E., J.D.

Environmental Chemistry Services, Inc.

Nancy Toole

QA Associates, Inc.

Dr. Don Flory

Sierra Services

Dick Woodward

Graziano & Partners

Robert M. Graziano

Dr. Herb Ward and Dr. H.C. Clark, of **Rice University**, and Dr. Wayne A. Pettyjohn, P.G., of **Oklahoma State University**, and others present special lectures from time to time, depending upon their availability and on lecture scheduling.

COURSE CONTENT

Summary Course Syllabus

SECTION I. Introduction to the Course

- A. Overview of Course
- B. Course Purpose & Objectives
- C. Course Assignments & Ranking

SECTION II. Regulatory Framework: Environmental Law & Regulations

- A. History of RCRA & CERCLA Programs
- B. Definition of RCRA Regulations
- C. Corrective Action Planning and Implementation
- D. Hazardous Material Definitions & Management
- E. Definition of CERCLA Programs

SECTION III. Health & Safety Regulations, Strategies & Planning

- A. OSHA Regulations
- B. DOT Regulations
- C. Health & Safety Protocol
- D. Hazwoper Regulations & Technical Coverage (OSHA 40-Hr.)

SECTION IV. Programmed Response to the Regulations

- A. Site Assessment & Audits
- B. Site Characterization (Environmental Chemistry, Geology, Applied Hydrogeology)
- C. Selection of Clean-up Alternatives (Air Quality Analysis and Control)
- D. Specialized Applications (Risk Assessment, Conceptual Engineering, Remediation Engineering and Construction)

SECTION V. Project Management

- A. Objectives
- B. Approaches: Line vs. Matrix
- C. Responsibilities (Scoping, Budgeting and Scheduling)
- D. Staff Development: Technical & Managerial
- E. Liabilities (Quality Control and Quality Assurance)

SECTION VI. Environmental Marketing

- A. Methods & Objectives
- B. Approaches & Philosophy

SECTION VII. Environmental Recruiting

- A. Industry Activity
- B. Approach
- C. Networks
- D. State of the Industry

**Come join a new network !
Free Lifetime Membership.**

REGISTRATION FORM

Registration Opens: July 1, 1995

INTRODUCTION TO ENVIRONMENTAL TECHNOLOGY™

Produced By
Michael D. Campbell, P.G., P.H.
Principal Instructor

**Fall Training Class Scheduled to Begin:
September 5, 1995**

Sponsored by:
Institute of Environmental Technology™
2537 South Gessner, Suite 102, Houston, Texas 77063

Name: _____ SS#: _____

Street: _____ City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ Date of Registration: _____

Education: ☐ High School ☐ 4 Yr. Degree ☐ Master's ☐ Ph.D.; Field(s) _____

Reason for interest in course: _____

From where/whom did you learn about this course? _____

Course Information

Lecture times: Tuesdays & Thursdays: 7:00 pm - 10:00 pm; Labs on Saturdays: 8:00 am- Noon+
Location: Institute of Environmental Technology, 2537, Suite 102, South Gessner, near Westheimer.

Course fees: Tuition: \$1,675.00 Financial support available for qualified individuals.
Includes: books, reference materials and 40-Hr OSHA Certification, if awarded.

Registration: Mail payment to:  United Resources International
17419 Sandy Cliffs Drive
Houston, TX 77090

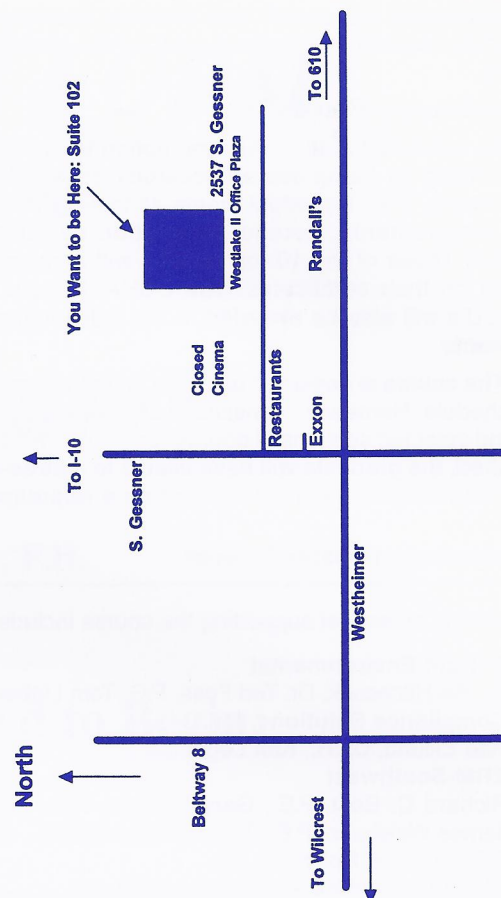
For additional information: Telephone: (713) 440-7665 Fax: (713) 583-9730



Introduction to Environmental Technology™

MISCELLANEOUS COURSE INFORMATION

- Examinations:** Midterm: One midterm-examination: take-home, open-book examination encouraging individual research of literature distributed during the first half of the course. A five-day turn-around is required for handing in the completed examination.
Hazwoper: A closed-book, one-hour examination held towards the end of the course is required for all students whether or not registered for the optional Hazwoper 40-Hr. Certification. The answers to the exam questions are discussed in detail immediately following the examination. A minimum passing grade of 70 is required. Remedial options are available.
Final: A final examination is given and covers the entire course. It is a closed-book, two-hour examination held on the last day of the course.
- Field Trips:** Superfund Field Trips: One or more field trips are taken during the course by bus to visit selected Superfund sites in the Houston-Harris County area. The trips are taken on Saturdays from 8:00 AM to 5:00 PM.
- Field Demonstrations:** Equipment demonstrations are presented throughout the course and range from drilling, sampling and well construction, CPT, geophysical logging, monitoring well measurements to remediation equipment.
- Class Presentations:** Class members are assigned topical papers from the literature of the environmental field for presentation within a 20-minute time format to the assembled class members during the regular meeting times in the latter part of the course. This assignment is voluntary. A default score of 50 is assigned to students who choose not to make a presentation.
- Continuing Education Units (CEUs):** Approximately 17.5 CEUs will be awarded upon satisfactory completion of the course.
- Return Policy:** No tuition refunds after the first week of classes.



Institute of Environmental Technology™
2537 South Gessner, Suite 102
Houston, Texas 77063

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Introduction to Environmental Technology™

Sponsored by The Institute of Environmental Technology™

Designed for Petroleum Geologists, Geophysicists
Chemists, Engineers, Technicians,
and Others Up to the Challenge.

Presented Since 1992 with Continuous Improvement
Tell your Friends and Neighbors about the Course.