

Chapter 7

Introduction

Technological development and advancements in the various engineering fields are occurring at a fast pace. It is therefore imperative that you take periodic training courses in your field. Should you become involved in work where your academic background is inadequate, additional technical training may be needed. For example, administration and management training is desirable – perhaps even essential – if you plan to follow a management or program administration career path. A senior position within your career plan may require an advanced degree. For Commissioned Corps Officers, continuing education is indicative of career development and, as a result, increases your value to the corps.

Government Training Programs

Definitions of Government-Sponsored Training

Although individual PHS agencies provide funds for training, neither PHS nor DCP have specific funds set aside. The availability of funds, as well as policies on training, varies from Agency to Agency. Check with your supervisor to determine the policies in your Agency and the availability of funds, if any. Most PHS Agencies will probably approve government funded, short term training if: (1) it does not involve travel; (2) it is job related; and (3) it is part of your overall career plan. Basically, there are four categories of government-funded training: long term, short term, extramural, and intramural.

Long Term Training

A limited number of opportunities are available in PHS for individuals who wish to pursue post graduate training while maintaining employee status and salary. Long term training is a full time pursuit that exceeds 30 days and may be granted for as much as three years. This training is approved and funded by each PHS Agency. There is a lengthy payback obligation. Typically, the Agency continues to provide the employee's salary while funding the cost of tuition and fees. To be considered, requests for long term training support must be fully justified, including documentation of how the training will benefit the employing program as well as the employee. Although most trainees obtain a degree by taking advantage of the advanced education opportunity, the training is not provided solely for that purpose.

For payback, the Commissioned Corps has its own unique definition of long term training, as well as a specified application procedure (Form PHS 1122) for commissioned officers. Detailed information is available in a Manual Issuance to the Commissioned Corps Personnel Manual that comes out every fall.

Short Term Training

Short term training may include any full time training that takes less than 30 days or part time training (e.g., evening classes) that covers a longer period. Although the Commissioned Corps again has its own unique definition, Commissioned Corps and Civil Service employees use Form HHS 350 to apply for short term training.

Extramural Training

This covers all training provided under the sole auspices of non PHS training facilities.

Intramural Training

This covers training provided under the primary auspices of PHS training facilities or by an affiliated institution in which a PHS Agency has some administrative control.

The following is a partial list of specific government training programs. Contacts and phone numbers are included where known, as well as brief descriptions of some of the courses offered. This section is intended to provide PHS engineers and architects with information on training opportunities, not only in their Agency but in other Agencies to which they may consider transferring in the future.

If the Agency of interest is not listed, contact your Agency Commissioned Officer specialist or your personnel office for assistance in reaching the Agency which you wish to obtain training.

Office of Personnel Management (OPM)

The Office of Personnel Management, Office of Human Resources Development Leadership and Policy Division provides internet links to current training resources at <http://www.opm.gov/hrd/lead/index.htm>. Links are provided for:

- Career Assessment Resources
- Core Competency Resources
- Human Capital
- Knowledge Management Resources
- Learning Technology Resources
- Training Resources
- Other Resources
- Work Force Planning

Contact
U.S. Office of Personnel Management
Office of Human Resource Development
1900 E Street NW, Room 1453
Washington, DC 20415-2100
Tel (202) 606-2721

Fax (202) 606-2394
E-Mail: hrdleadership@opm.gov

Program Support Center (PSC) Training Office

The PSC Training Office offers customer service, pre-retirement seminars, and computer courses. The PSC may procure other courses if there is a demand and funding is provided.

Contact
Program Support Center Training Office
The Parklawn Building
5600 Fishers Lane, Room 17A 26
Rockville, MD 20857
Tel (301) 443 7418

Agency for Toxic Substances and Disease Registry (ATSDR)

ATSDR offers a wide variety of training courses for its engineers. These courses include, but are not limited to:

- Basic Course for Health Assessment & Consultation
- Intro to GIS and Spatial Analysis
- Advanced GIS and Spatial Analysis
- Health Education for the Health Assessment Process
- Statistics in Assessing Exposures and Public Health Implications
- ATSDR Media Training
- Health Outcome Data Evaluation
- Indoor Air Exposures

A schedule of ATSDR course offerings can be found on the ATSDR events calendar at www.atsdr.cdc.gov/calendar.html

In addition, the Human Resources Management Office, Organizational Development Branch of the CDC offers courses to ATSDR and CDC engineers. Many of these courses are offered via the CDC Corporate University which has seven schools. These schools cover a wide variety of topics and are listed below:

- School of Leadership and Management Development
- School of Public Health Medical
- School of Public Health Science and Research
- School of Public Health Education and Communication
- School of Public Health Information Resource Management
- School of Public Health Administration
- School of Business Management

Most of these courses are taught in Atlanta, but some are also taught in the CDC offices in Fort Collins, CO; Cincinnati, OH; Morgantown, WV; and Hyattsville, MD.

Contact
The Organizational Development Branch (OPS, CDC)
Tel (770) 488 1717

Environmental Protection Agency (EPA)

Most EPA engineers are located in major metropolitan areas where there are many training opportunities. For example, in the Washington, DC area, seven universities offer accredited graduate engineering degree programs.

Long Term Training

Through its Institute for Individual and Organizational Excellence (Institute), EPA offers intramural programs in administrative development, management internships, courses in mid level management, and special assignments to other Federal agencies, Congress, states, and educational and non profit institutions, which also provide educational/training opportunities. The University of Maryland offers graduate courses at EPA headquarters.

Short Term Training

EPA, like most Federal agencies, supports intramural and extramural short term training. Intramural training is provided by each EPA office (e.g., the Office of Water, the Office of Air and Radiation, etc.) and is generally geared toward current policies and procedures for recent environmental laws and regulations affecting that particular office. The Institute provides internet links to a variety of short term training opportunities available to EPA employees. The Institute can be contacted at (202) 564-7563 or on the EPA intranet at <http://intranet.epa.gov/epahriis/institute>. An extensive listing of EPA sponsored training courses can be accessed through the Institute site. A number of EPA courses can also be found on the internet at <http://www.trainex.org>.

Indian Health Service (IHS)

The IHS places a high priority on professional training, both long term and short term, for its engineers. In addition, the IHS provides a Loan Repayment Program.

Long Term Training

Although the availability of funds to support long term training depends on annual appropriations, IHS has historically supported three or four engineers per year for 1 year of full time post graduate training in engineering or public health. In this way, many IHS engineers receive a Master's Degree. IHS also supports 10 to 20 other engineers throughout the country who are working part time (evenings and weekends) toward a graduate degree. While stationed in remote duty assignments, many of these engineers take advantage of off campus programs that use video tape instruction. For example, the University of New Mexico has such a program.

Short Term Training

IHS supports intramural and extramural short term training for engineers. Extramural training typically covers management, computers, environmental regulations, and specialty technical training in drinking water treatment, wastewater treatment, solid waste disposal, and facilities maintenance.

The IHS training branch conducts intramural training primarily targeted toward entry level engineers. One week, hands on courses are offered annually, most in Albuquerque, New Mexico, for IHS and tribal engineers. Topics covered include:

- Well Drilling
- Community Solid Waste Management
- Facilities Health and Safety
- Disaster Response
- Basic Surveying
- Electronic Surveying/Computer Design
- NEPA and Environmental Legislation
- Hazardous Waste Management
- Pumps and Controls
- Mid level Management

Contact

Environmental Management Branch
Tel (301) 443-1046

Loan Repayment Program

The IHS Loan Repayment Program (LRP) was authorized under the amendments to the Indian Health Care Improvement Act in 1992. The purpose of the LRP is to help recruit and retain health professionals, including engineers, at hard-to-fill locations. Under the program, the IHS can pay outstanding educational loans, including tuition expenses, reasonable educational and living expenses, and income tax liability. The program limit is \$39,300 per year for each year of contracted service. The contract time period is two years. Applicants are selected based on an engineer duty station priority list, which is updated each year by the IHS engineer category.

For more information about the LRP, contact:

Indian Health Service
Division of Health Professions Recruitment & Training
Loan Repayment Program
12300 Twinbrook Parkway, Suite 100
Rockville, MD 20852
Tel (301) 443-3396

National Institutes of Health (NIH)

NIH seeks to improve the health of the people of the United States by conducting and supporting research in the causes, diagnosis, prevention, and cure of diseases of man and the processes of human growth and development. Because a well trained and knowledgeable workforce is essential to the achievement of its goals, NIH also provides a variety of engineering/science related training opportunities.

The Foundation for Advanced Education in the Sciences, Inc.

The FAES was created to foster scientific research and education through communication among scientists and formal instruction in the sciences. The FAES graduate school is sponsored and managed by NIH. FAES offers over 250 graduate and undergraduate level courses that cover topics including Biology and Genetics, Chemistry and Physics, Languages, Mathematics and Computer Science, Microbiology and Immunology, and Statistics. FAES courses are available to government and non government employees.

Contact

FAES Graduate School at NIH
One Cloister Court, Building 60 – Suite 230
Bethesda, MD 20814 1460
Tel (301) 496 7976
<http://www.faes.org>

Human Resource Development Division

A growing body of evidence suggests that learning on the job has been by far the most significant factor in expanding productive capacity. With that in mind, the NIH Human Resource Development Division offers a wide variety of instructor-led and on-line training courses. Instructor-led courses are offered at the NIH Training Center. These courses include such topics as Personal Computing, Supervisory Development, Management Development, Career Planning, Education and Development, Office Operations, and Communication Skills.

Contact

NIH Training Center
Executive Plaza South (EPS), Ste 100
6120 Executive Boulevard
Rockville, MD 20892
Tel (301) 496 6211
Fax (301) 402 1623
<http://learningsource.od.nih.gov/>

Center for Information Technology (CIT) Computer Training Program

The DCRT Computer Training Program is coordinated by the Computer Center Branch of NIH. Through classroom courses, seminars, and self study courses, the program enables potential computer users to begin work and allows experienced users to improve their efficiency on PCs as well as large mainframes. There are approximately 70 classroom courses and seminars and

50 independent training courses. Topics covered include, but are not limited to: Personal Computers, Networks, Internet Resources, OS/390, and Statistics.

Contact
CIT Computer Training Program, Building 12A, Room 1011
NIH
12 South Drive
Bethesda, MD 20892-5605
Tel (301) 496-6248
Fax (301) 402-7349
<http://training.cit.nih.gov>

Food and Drug Administration (FDA)

Most FDA engineers work in the Center for Devices and Radiological Health (CDRH). Two types of training are available for CDRH employees: programs and courses. Programs are operationally defined as long term training and are typically categorized by employee grade and specific eligibility factors. There are three programs:

- Career Entry (GS 5/7/9)
- Mid level (GS/GM 11 through 15)
- Senior Executive Development (GS/GM 16 through 18)

Courses refer to short term training classes designed to enhance the employee's ability to do his/her job as consistent with the goals and objectives of the Agency. To take a course, the employee must describe how the content of the course relates to the performance of his/her official duties. The employee must also have the endorsement of management. Courses can range from one day seminars to classes that meet over a period of several weeks. Courses may be offered through various colleges, universities, and other organizations and/or institutions.

Private Sector

Many universities offer opportunities for engineers to earn graduate degrees on a part time or off-campus basis. Part time programs are delivered via several different methods. Traditional on campus evening programs, distance learning via the internet or video tape are the most common means of delivery. Contact information for a small sample of graduate programs in engineering and public health is provided in this handbook. Contact the engineering or graduate school departments of the University you are interested in attending for information on specific programs. Schools of public health can be accessed at a web site maintained by the American Public Health Association, http://www.apha.org/public_health/schools.htm. Accredited schools and programs of public health are listed on the Council on Education for Public Health web site at <http://www.ceph.org/>.

The Electronic Campus of the Southern Regional Education Board

The Electronic Campus of the Southern Regional Education Board (SREB) is an "electronic" marketplace for courses. Courses are offered by participating

institutions in the SREB in engineering and non engineering disciplines. The SREB is comprised of 16 states that have entered into an agreement that enables students to pursue unique majors offered in other SREB states while paying in state tuition. Member states include DE, MD, WV, VA, NC, KY, SC, GA, TN, AL, MS. LA, AR, OK, TX, FL. More information on the SREB, Academic Common Market, Electronic Campus and information on specific course and program offerings may be found at <http://www.sreb.org/programs/acm/acmindex.asp>.

The Association for Media Based Continuing Education for Engineers, Inc. (AMCEE)

AMCEE is a non profit, tax exempt, educational consortium of 29 universities in the United States with prominent engineering schools. The consortium was formed in 1976. Headquartered on the campus of the Georgia Institute of Technology in Atlanta, Georgia, AMCEE is dedicated to providing current continuing education and professional development courses for engineers, technical and scientific professionals, and technical managers in an ever expanding array of technical fields.

The consortium has been offering continuing education courses via video tape since its inception in 1976.

Contact
AMCEE, Inc.
Distance Learning
PO Box 210158
Tucson, AZ 85721 0158
Tel (800) 338 9344
Fax (520) 626 3708
E-mail: info@amcee.org
<http://www.amcee.org/>

The National Technological University (NTU)

NTU, was incorporated in January of 1984, as a subset of the participating institutions in AMCEE. NTU combined with PBS The Business and Technology Network to become Stratys Learning Solutions. Stratys Learning Solutions is a consortium of 52 U.S. universities offering courses for academic credit and professional development. Stratys currently offers

- 19 Master's degree programs
- over 1300 academic courses
- over 500 professional development courses annually
- over 200 courses or programs offered via the web
- hundreds of courses available on CD-ROM
- a blue chip customer base of over 200 major corporations and government entities

Degrees are awarded from NTU, not from any specific university. For additional information contact:

The National Technological University
700 Centre Avenue
Fort Collins, CO 80526
Tel (800) 582 9976 or (970) 495 6400
Fax: (970) 484 0668
<http://www.ntu.edu>

Selected Universities with Part Time Graduate Engineering Programs

Auburn University

202 Ramsay Hall
Auburn University, AL 36849-5336
Contact: Graduate Outreach Program
Tel (888) 844-5300 or (334) 844-5300
Fax (334) 844-2519
<http://www.eng.auburn.edu/gop/>

Masters Degrees: Chemical Engineering, Civil Engineering, Electrical and Computer Engineering, Industrial Engineering, Materials, and Mechanical Engineering

Colorado State University

Colorado State University Network for Learning (CSUN)
Spruce Hall
Fort Collins, CO 80523
Contact: Registrar
Tel (877) 491-4336
<http://www.learn.colostate.edu/csun/ddp>

Masters Degrees: Bioresource and Agricultural Engineering, Chemical Engineering, Civil, Electrical and Computer, Engineering Mgt, Industrial Engineering Mechanical Engineering, Environmental Engineering, Statistics, Telecommunications

University of Idaho

Engineering Outreach
PO Box 441014
Moscow, ID 83844-1014
Contact: Video Outreach Program
Tel (208) 885-6373, (800) 824-2889
Fax (208) 885-6165
<http://www.uidaho.edu/evo>

Masters Degrees: Agricultural Engineering, Civil Engineering, Computer Science, and Electrical Engineering. Environmental Science, Geological Engineering, Mechanical Engineering.

North Carolina State University

Video-Based Engineering Education
College of Engineering
254 Page Hall
Box 7547
Raleigh, NC 27695
Tel (919) 515-5435
Fax (919) 515-8415
E Mail: fred_eargle@ncsu.edu
<http://www.vbee.ncsu.edu/>

Masters Degrees: Chemical Engineering, Civil Engineering, Computer Science, Electrical and Computer Engineering, Industrial Engineering, Materials Science & Engineering, Mechanical Engineering, Aerospace Engineering

Southern Methodist University

School of Engineering Distance Education
Dallas, TX
Tel (214) 768-3232
Fax (214) 768-3778
<http://engr.smu.edu/distance/overview.html>

Masters Degrees: Computer Engineering, Civil Engineering, Computer Science, Electrical Engineering, Engineering Management, Environmental Systems Management, Materials Science and Engineering, Operations Research, Software engineering, Software Engineering, Systems Engineering, Telecommunications

University of Massachusetts

College of Engineering
113 Marcus Hall, Box 35115
Amherst, MA 01003-5115
Contact: Video Instructional Program,
Tel (413) 545-0063
Fax (413) 545-1227
<http://peeas.ecs.umass.edu/index.html>

Masters Degrees: Master of Science in Electrical and Computer Engineering, Computer Science, and Engineering Management

University of Wisconsin - Madison

Department of Engineering
Professional Development
432 North Lake Street, Room 843
Madison, WI 53706
Contact: Professional Development Degree Program
Tel (608) 262-2061, (800) 462-0876
Fax (608) 263-3160
<http://www.engr.wisc.edu>
<http://epdweb.engr.wisc.edu>

Masters Degrees: Professional Development Degree in Engineering (P.D.),
Technical Japanese, Professional Practice

Other Universities with Graduate Programs in Engineering or Public Health**Emory University**

Atlanta, GA 30322
Tel (404) 727-7802
<http://www.sph.emory.edu>

Masters Degrees: Master of Public Health

Georgia Institute of Technology

Distance Learning, Continuing Education, and Outreach
Atlanta, GA 30332
Tel (404) 894-3378
Fax (404) 894-8924
<http://www.gatech.edu>
<http://www.conted.gatech.edu>

Masters Degrees: Environmental Engineering, Health Physics/Radiological
Engineering, Electrical & Computer Engineering, Industrial Engineering,
Mechanical Engineering

Georgia State University

Atlanta, GA 30303 3085
Tel (404) 651-2365
<http://www.gsu.edu>

Masters Degrees: Hydrogeology, Public Policy, Physical Sciences, Business,
and Law

University of Georgia Gwinnett Center

1000 University Center Lane
Lawrenceville, GA 30043
Tel (706) 542-2057
<http://www.uga.edu/gwinnett/>

Master of Public Administration (Can be Obtained off Campus)

George Washington University

Graduate Admissions Office
2121 I Street NW
Washington, DC 20052
Tel (202) 994 1000
<http://www.gwu.edu>
<http://www.seas.gwu.edu>
<http://www.gwu.edu/~mastergw/programs/index.html>
<http://www.gwumc/sphhs/>

Masters Degrees: Engineering Management and Systems Engineering, Public Health

Howard University

College of Engineering, Architecture, and Computer Science
2300 6th Street NW
Washington, DC 20059
Tel (202) 806-6565
<http://www.imappl.org/CEACS>
<http://howarduniversityonline.com>

Masters Degrees: Environmental Engineering

The Johns Hopkins University

Baltimore Campus
230 Mergenthaler Hall
3400 North Charles Street
Baltimore, MD 21218
Tel (410) 516-8174
<http://www.jhu.edu>
<http://www.jhu.edu/washingtonarea/>

Masters Degrees: Applied and Computational Mathematics, Applied Biomedical Engineering, Bioinformatics, Chemical Engineering, Civil Engineering, Computer Science, Electrical and Computer Engineering, Environmental Engineering & Science, Information Systems & Technology, Materials Science & Engineering, Mechanical Engineering, Optics, Systems Engineering, Technical Management, Telecommunications & Networking, Public Health

(Classes also available at the Montgomery County Center)

Catholic University

Graduate Admissions
620 Michigan Avenue NE
Washington, DC 20064
Tel (202) 319 5000
<http://www.cua.edu>
<http://engineering.cua.edu>

Master and Doctorate Degrees in Civil, Mechanical, Biomedical, and Electrical Engineering. Master of Science in Engineering Management

George Mason University

School of Information Technology and Engineering
4400 University Drive
Fairfax, VA 22030-4444
Tel (703) 323 2000
<http://www.gmu.edu>
<http://www.ite.gmu.edu>

Masters Degrees: Civil and Infrastructure Engineering, Computer Engineering, Computer Science, E- Commerce, Electrical Engineering, Information Systems, Operations Research, Software Systems Engineering, Statistical Science, Systems Engineering, Telecommunications