

Spring Semester 2007

Graduate Institute

Member Universities

Degree Programs

Louisiana State University
Engineering Sciences
Environmental Studies
Experimental Statistics

Mississippi State University
Civil Engineering
Environmental
Geotechnical
Hydraulics
Structural

Computational Engineering
Engineering Management
Electrical Engineering
Industrial Engineering
Computer Science and
Engineering
Mathematics and Statistics
Business Administration
Project Management

Texas A&M University
Ocean Engineering
Oceanography

Inquiries and Questions

Graduate Institute
U.S. Army Engineer Research
and Development Center
3909 Halls Ferry Road
Vicksburg, MS 39180-6199
(601) 634-4279
[http://graduate-institute.erdcd.usace.
army.mil](http://graduate-institute.erdcd.usace.army.mil)
E-mail: [graduate-institute@erdcd.usace.
army.mil](mailto:graduate-institute@erdcd.usace.army.mil)

The Graduate Institute

The Graduate Institute is an association of universities and the U.S. Army Engineer Research and Development Center (ERDC) through which academic credit and graduate degrees can be earned from Member Universities that offer programs at ERDC. The Institute was established in 1986 and functions through joint agreement between ERDC and Member Universities (Louisiana State University, Mississippi State University, and Texas A&M University). Academic oversight is given by the Graduate Institute Administrative Board, a group composed of a representative from ERDC and each Member University.

The Graduate Program

Under the program, you may enroll as either a nondegree student or in a graduate degree program at a Member University.

If you plan a degree, it will be necessary to apply for admission from the Member University offering the program desired. Completed admission forms should be submitted to the University through the U.S. Army Engineer Research and Development Center, ATTN: Graduate Institute, 3909 Halls Ferry Road, Vicksburg MS 39180-6199. Application forms can be obtained from the Graduate Institute or from the Admissions Office at the University. Please note that if you have been accepted in selected out-of-state programs, you may be eligible to enroll on an in-state tuition basis through the Academic Common Market.

Upon admission as a degree candidate into a graduate program, it will be necessary to form a graduate committee to advise and work with you in the selection of a thesis topic and the selection of courses. The graduate committee will consist of members from the university graduate faculty and a member from ERDC who has adjunct, visiting, or affiliate faculty status. The committee will be chaired by a member of the graduate faculty appointed by the head of the major department. The Institute will assist you in contacting and making arrangements to form your graduate committee.

In addition to providing courses to meet degree requirements, the Institute also offers graduate credits in other scientific disciplines.

The Graduate Institute does not discriminate against anyone because of age, color, national origin, race, religion, sex, or handicap.

Courses: Spring Semester 2007

Mississippi State University

Civil Engineering

CE 6513. Engineering Hydrology. (3).

Instr. Dr. B. Johnson, ERDC.
Hydrologic processes; rainfall-runoff analysis; groundwater flow; frequency analysis; hydrologic design.
Tu & Th, 3:30-4:45 p.m., Classroom No. 2, Bldg. 3072.

CE 6533. Computational Methods in Water Resources. (3).

Instr. Dr. J. Martin, MSU.
Review of relevant numerical analysis; numerical methods for kinematic wave, St. Venant, Boussinesq and depth-averaged equations; simulation of one- and two-dimensional free-surface flows.
M, W, & F, 8:00-9:50 a.m., Classroom No. 2, Bldg. 3072.

CE 8543. Tidal Hydraulics. (3).

Instr. Dr. W. McAnally, MSU.
Hydrodynamics and transport in tidal bays and estuaries. Unsteady, non-uniform stratified flows, tides, waves, currents, circulation, salinity intrusion, and sedimentation, and engineering analysis and works.
Tu & Th, 12:30-1:45 p.m., Classroom No. 2, Bldg. 3072.

CE 8543. Groundwater Res Evaluation. (3).

Instr. Staff, MSU.
Hydrodynamics and transport in tidal bays and estuaries. Unsteady, non-uniform stratified flows, tides, waves, currents, circulation, salinity intrusion, and sedimentation, and engineering analysis and works.
M & W, 3:00-4:15 p.m., Classroom No. 4, Bldg. 3072.

CE 8923. Surface Water Quality Modeling. (3).

Instr. Dr. J. Martin, MSU.
Development of the mathematical formulations describing the distribution of concentration of conservative and non-conservative pollutants describing the distribution of concentration of conservative in natural waters.
M, W, & F, 9:00-9:50 a.m., Classroom No. 4, Bldg. 3072.

Computer Science and Engineering

CSE 6990. Special Topics in CSE.

Instr. Dr. T. Jankun-Kelly, MSU.
MSU Internet.

CSE 8433. Advanced Computer Graphics. (3).

Instr. Dr. J. Swan, II, MSU.
Realistic, three-dimensional image generation; modeling techniques for complex three-dimensional scenes; advanced illumination techniques; fractal surface modeling; modeling and rendering of natural phenomena.
MSU Internet.

Electrical and Computer Engineering

ECE 6643. Power Systems Relaying and Control. (3).

Instr. Dr. H. Ginn, III, MSU.
Protection objectives and fundamentals; inputs; protection of generators, transformers, busses and line; stability and control.
M, W, & F, 12:00-12:50 p.m., Classroom No. 4, Bldg. 3072.

ECE 6923. Feedback Control Systems II. (3).

Instr. Dr. R. Follett, MSU.
Finite difference and recurrence equations. Z-transform theory. Analysis of sample-data control systems. Design of digital control systems.
M, W, & F, 11:00-11:50 a.m., Classroom No. 4, Bldg. 3072.

ECE 6990. Special Topics in ECE. (3).

Instr. Dr. S. Grzybowski, MSU.
Tu & Th, 11:00-12:15 p.m., Classroom No. 4, Bldg. 3072.

ECE 8423. Adaptive Signal Processing. (3).

Instr. Dr. N. Younan, MSU.
Adaptive filtering, theoretical foundation, algorithms, structures, and implementations. Applications are included.
Tu & Th, 8:00-9:15 a.m., Classroom No. 4, Bldg. 3072.

Industrial Engineering

IE 6113. Human Factors Engineering. (3).

Instr. Dr. L. Strawderman, MSU.
Human capabilities and limitations affecting communications and responses in man-machine systems. Emphasis on physiological and psychological fundamentals.
MSU Internet.

IE 6513. Engineering Administration. (3).

Instr. Dr. S. Bullington, MSU.
Study of problems confronting the engineering manager. Includes: organization and communication theory, internal and external relationships and responsibilities, and designing and implementing managerial systems.
M, W, & F, 10:00-10:50 a.m., Classroom No. 4, Bldg. 3072.

IE 6533. Project Management. (3).

Instr. Dr. A. Greenwood, MSU.
Use of CPM, PERT, and GERT for planning, managing and controlling projects. Computer procedures for complex networks.
MSU Internet.

IE 6733. Linear Programming I. (3).

Instr. Dr. M. Jin, MSU.
General theory of linear programming and its application; the simplex algorithm, revised simplex algorithm, duality, sensitivity, transportation algorithm, assignment algorithm network analysis, and goal programming.
Tu & Th, 11:00 a.m - 12:15 p.m., Classroom No. 4, Bldg. 3072.

IE 8333. Production Control Systems. (3).

Instr. Dr. S. Bullington, MSU.
Inventory systems, static and dynamic production planning, operations scheduling and forecasting systems.
M & W, 3:00-4:15 p.m., Classroom No. 4, Bldg. 3072.

IE 8723. Operations Research II. (3).

Instr. Dr. M. Jin, MSU.
Problem formulation, general inventory theory, restricted inventory models. Markovian and queuing processes, sequencing and coordination, game theory search problems.
MSU Internet.

Mechanical Engineering

ME 6123. Failure of Engineering Materials. (3).

Instr. Dr. M. Horstemeyer, MSU.
The failure of constituent materials using real-world case studies is the focus. Experimental and analytical techniques for failure analysis and prevention are covered. (Same as CE 4323/6323).
M, W, & F, 10:00 - 10:50 a.m., Classroom No. 2, Bldg. 3072.

Mathematics

MA 8213. Foundations of Applied Mathematics II. (3).

Instr. Dr. W. Mastin, MSU.
A continuation of MA 8203 including topics from wave propagation, stability and similarity methods.
M & W, 3:30-5:00 p.m., Classroom No. 1, Bldg. 3072.

Business

ACC 8303. Survey of Accounting. (3).

Instr. Dr. N. Addy, Jr., MSU.
Introduction to financial and managerial accounting: including accounting process, cash flow, elements, business organizations, analysis of management reports and financial statements, cost planning and control.
MSU Internet. TUITION: \$1,331.25.

BQA 8443. Statistical Analysis for Business Decision-Making. (3).

Instr. Dr. J. Sullivan, MSU.
Review of descriptive statistics, parametric inference procedures, analysis of variance, regression, non-parametric methods; business problem formulation for computer analysis using statistical packages.
MSU Internet. TUITION: \$1,331.25.

BQA 8990. Special Topics in BQA. (3).

Instr. Dr. R. Taylor, MSU.
MSU Internet.

EC 6333. Applied Regional Economics. (3).

Instr. Dr. C. Campbell, MSU.
Economic analysis and effects of regional resources and development potentials, economic factors affecting industrial location decisions, planning and organization of industrial development.
MSU Internet. TUITION: \$1,331.25.

EC 8103. Economics for Managers. (3).

Instr. Dr. J. Rezek, MSU.
Primarily for masters-level candidates. Exposition of the fundamental theoretical and analytical tools of economics used by business managers engaged in decision making.
MSU Internet. TUITION: \$1,331.25.

MGT 8063. Survey of Management. (3).

Instr. Staff, MSU.

Survey of management principles and techniques including: objective, policies, functions, leadership, organization, and production control procedures and systems as applied to all fields of business.
MSU Internet. TUITION: \$1,331.75.

MGT 8111. Human Resource Issues. (1).

Instr. Dr. R. Long, MSU.

Survey of nature and influences of human resource management in organizations. Case studies are used to apply and reinforce theory.
MSU Internet. TUITION: \$443.75.

MKT 8990. Special Topics in Marketing. ().

Instr. Dr. J. Collier, MSU.

MSU Internet.

First Term: 8 January – 28 February 2007

ACC 8112. Financial Statement & Management Accounting Report Analysis for Decision Making. (2).

Instr. Dr. N. Addy, Jr., MSU.

Analysis of financial statements and internal accounting reports to help management make decisions.
MSU Internet. TUITION: \$887.50.

FIN 8112. Capital Acquisition and Allocation. (2).

Instr. Dr. R. Gilmer, Jr., MSU.

Integration of risk and return concepts, capital structure, cash flow estimation, the capital acquisition process and capital budgeting into one framework.
MSU Internet. TUITION: \$887.50.

MGT 8990. Special Topics in Management. ().

Instr. Dr. B. Spencer, MSU.

MSU Internet.

Second Term: 1 March – 3 May 2007

BIS 8112. Managing Information Technology and Systems. (2). Instr. Dr. J. Shim, MSU.

Course includes the description, acquisition or development and use of systems from a local and global perspective. Technology enabled concepts are used for student assignments.
MSU Internet. TUITION: \$887.50.

BIS 8122. Multimedia Presentation and Communication. (2). Instr. Dr. C. Lehman, MSU.

Emphasis on planning and delivering business presentations enhanced by multimedia. Concepts, design, and experience in developing multimedia presentations. Exposure to interactive multimedia.
MSU Internet. TUITION: \$887.50.

FIN 8122. Corporate Liquidity Analysis. (2).

Instr. Dr. R. Gilmer, Jr., MSU.

The role working capital plays in the viability of the firm and the financial management tools used to analyze and manage the firm's liquidity position.
MSU Internet. TUITION: \$887.50.

MGT 8112. Leadership Skills for Managerial Behavior. (2).

Instr. Staff, MSU.

Survey of major behavioral skills used by managers to help them understand and influence behavior in an organizational setting.
MSU Internet. TUITION: \$887.50.

Texas A&M University

Ocean Engineering

OCEN 685. Problems. (1-6). Research for thesis or dissertation.

OCEN 691. Research. (1-6). Research for thesis or dissertation.

University of Louisiana at Monroe

CSCI 200. Introduction to Computer Programming. (3).

Instr. Dr. K. Taylor, ULM.

An introduction to algorithms and programming, with an emphasis on the basic design, implementation, and testing of solutions to numerical and nonnumerical problems. Prerequisite: CSCI 180 or credit or registration in a mathematics core curriculum course.

M & W, 2:00-2:50 p.m., Classroom No. 4, Bldg. 3072.

CSCI 203. Intermediate Programming. (3).

Instr. Dr. J. Cordova, ULM.

Continuation of CSCI 200, with increased emphasis on program design (including structured and object oriented techniques, data structures, and algorithms). (Prereq.: Grade of "C" or better in CSCI 200 and credit or registration in MATH 113 or permission of the department head.)

Tu & Th, 11:00-12:15 p.m., Classroom No. 4, Bldg. 3072.

CSCI 226. Introduction to Discrete Structures. (3).

Instr. Dr. K. Taylor, ULM.

Set algebra, Boolean algebra, mappings, directed and undirected graphs. (Prereq.: Grade of "C" or better in CSCI 200 and MATH 113.)

Tu & Th, 9:30-10:45 a.m., Classroom No. 4, Bldg. 3072.

CSCI 305. Analysis of Algorithms. (3).

Instr. Dr. L. Smith, ULM.

The design and analysis of computer algorithms and data structures. Classes of algorithms studied include sorting, searching, graph, parallel and NP complete. An in-depth study into both efficiency and design. Correctness and formal verification of algorithms. (Prereq.: Grade of "C" or better in CSCI 273.)

M & W, 11:00-12:15 p.m., Classroom No. 4, Bldg. 3072.

Calendar: Spring Semester 2007

8 Jan 07	Semester begins for MSU.
12 Jan 07	Last day to drop a class from MSU without a grade.
16 Jan 07	Semester begins for TAMU and ULM.
18 Jan 07	Last day to add or drop courses from ULM.
22 Jan 07	Last day to add or drop courses from TAMU.
2 Apr 07	Last day to withdraw from TAMU.
11 Apr 07	Last day to withdraw from MSU.
3 May 07	Semester ends for MSU.
9 May 07	Semester ends for TAMU.
11 May 07	Semester ends for ULM.

Registration

Registration will be held 6 Nov – 18 Dec 06 (except 22-27 Nov), 8:30 a.m. until 4:00 p.m., Building 3072 at ERDC. All students must be registered by 18 Dec.

Tuition and Fees

MSU – \$1,134 / 3 Sem Hrs (\$378 / Sem Hr). Thesis and dissertation research hours will be \$253 / Sem Hr. Tuition/fees for MBA classes will be as noted.

TAMU – \$1,799.28 / 3 Sem Hrs (subject to change).

ULM – \$529.75 / 3 Sem Hrs (subject to change).

Tuition and fees are payable at registration by check or money order. Corps employees must bring a copy of an **approved** purchase request (DD Form 1556).

New Students and Readmit Students

New students enrolling in courses for the first time **MUST** have a copy of their undergraduate transcript mailed to the Graduate Institute and complete an application form prior to registration. Students who have not been enrolled in classes at MSU for one semester (Spring or Fall) or more should apply for readmission and enrollment in classes. All new and readmit students enrolling in courses offered by MSU will have to pay an application fee of \$30. New LSU and TAMU students will have to pay an application fee of \$25 and \$50, respectively.

Withdrawals and Refunds

Requests to withdraw from a course must be submitted in writing to the Graduate Institute. Refunds, if applicable, will be by the university according to their policy.

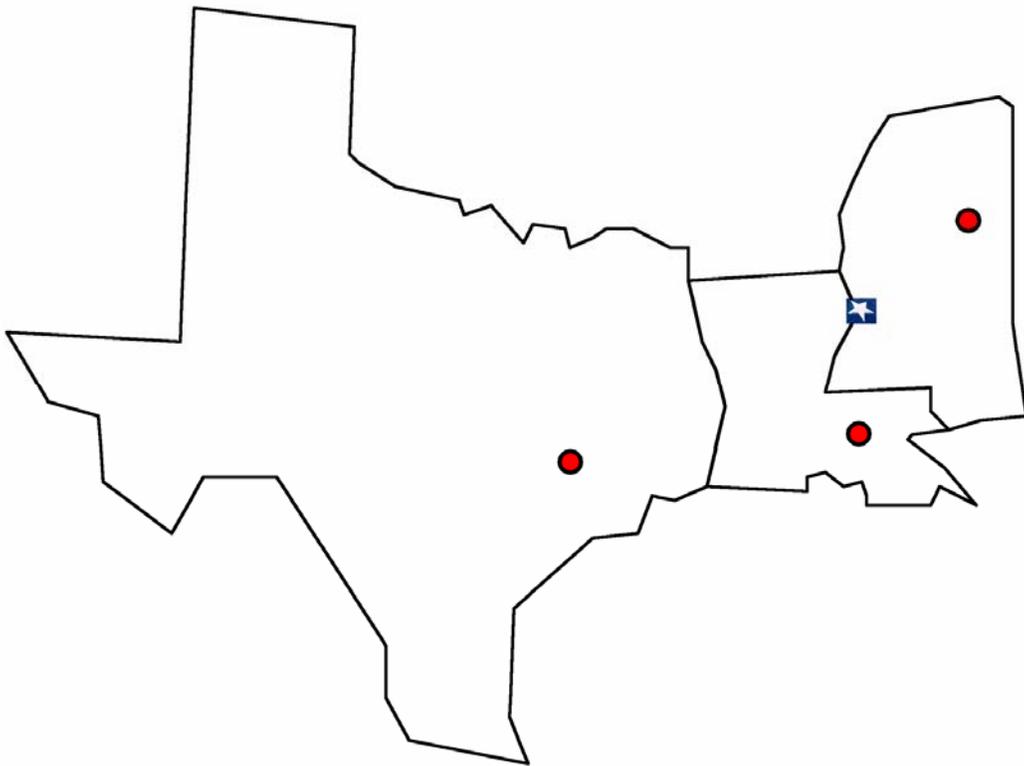
Textbooks

Books can be purchased through the colleges' bookstore or any retail source.



OFFICIAL BUSINESS
CEERD-WG

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER
CORPS OF ENGINEERS
WATERWAYS EXPERIMENT STATION
3909 HALLS FERRY ROAD
VICKSBURG, MISSISSIPPI 39180-6199



**US Army Corps
of Engineers®**
Engineer Research and
Development Center