

Spring Semester 2006

# 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>

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: Director, Graduate Institute, 3909 Halls Ferry Road, Vicksburg MS 39180-6199. Application forms can be obtained from the Director's office 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 Director 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, creed, color, national origin, race, religion, sex, or handicap.*

# Courses: Spring Semester 2006

## Mississippi State University

### Civil Engineering

#### **CE 6563. Sedimentation Engineering.** (3).

Instr. Dr. W. McAnally, MSU.

Processes by which cohesive and non-cohesive sediments are transported, deposited, and eroded. Computation of transport rates. Design and operation solutions to sediment problems.

Tu and Th, 11:00 a.m. to 12:15 p.m., Classroom No. 2, Bldg. 3072. (VTC.)

#### **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 nonconservative pollutants describing the distribution of concentration of conservative in natural waters.

TBA, Bldg. 3072. (VTC.)

#### **CE 8990. Data Analysis in Civil Engineering.** (3).

Instr. Dr. W. McAnally, MSU.

Analysis and interpretation of civil engineering data. Empirical, analytic, and statistical decomposition of spatial and temporal data for relationships and design decisions.

Tu & Th, 12:30 p.m. - 1:45 p.m., Classroom No. 2, Bldg. 3072. (VTC.)

### Engineering Mechanics

#### **EM 6213. Advanced Mechanics of Materials.** (3).

Instr. Dr. D. Smith, ERDC.

Stress, strain, stress-strain relationships, strain energy, failure theories, curved beams, unsymmetrical bending, shear center, torsion of noncircular sections, energy principles, Castigliano's theorem, inelastic behavior. (Prereq.: EM 3213.)

Th, 3:30-6:30 p.m., Classroom No. 1, Bldg. 3072.

#### **EM 8993. Theory of Elasticity.** (3). Instr. Dr. J. Peters, ERDC.

Fundamentals of continuum mechanics needed to formulate and interpret numerical solutions to problems in linear elasticity will be presented. Linear theories of beams and plates are derived from the general three-dimensional theory. Energy principles and their relationship to the weighted residual methods and finite element approximation are covered in detail. The concepts of stability, bifurcation, limit points, and imperfection sensitivity are introduced. Time, day, and classroom TBA, Bldg. 3072.

### Computer Science and Engineering

#### **CSE 6283. Software Testing and Quality Assurance.** (3).

Instr. Dr. J. Carver, MSU.

Topics include methods of testing, verification and validation, quality assurance processes and techniques, methods and types of testing, and ISO 9000/SEI CMM process evaluation. (Prereq.: CS 6213.)

M and W, 2:00-3:15 p.m., Classroom No. 3, Bldg. 3072. (VTC.)

#### **CSE 6733. Operating Systems I.** (3). Instr. Dr. Y. Dandass, MSU.

Historical development of operating systems to control complex computing systems; process management, communication, scheduling techniques; file system concepts and operation; data communication, distributed process management. (Prereq.: CSE 2314 and CSE 3124 or ECE 3724.)

Tu and Th, 11:00 a.m. - 12:15 p.m., Classroom No. 4, Bldg. 3072. (VTC.)

#### **CSE 8253. Software Design.** (3). Instr. Dr. T. Philip, MSU.

Software design principles, attributes, models, and methodologies; object-oriented designs; real-time system design; user interface design; design verification, reusability issues; tools; current issues. (Prereq.: CSE 6213.)

Tu and Th, 11:00 a.m. - 12:15 p.m., Classroom No. 3, Bldg. 3072. (VTC.)

#### **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.

M and W, 2:00 - 3:15 p.m., Classroom No. 4, Bldg. 3072. (VTC.)

### Electrical and Computer Engineering

#### **ECE 6333. Microwave Theory.** (3). Instr. Dr. P. Donohoe, MSU.

Review of Maxwell's equations; wave propagation; waveguides; impedance matching antennas and arrays; lasers.

M, W, and F, 11:00 a.m. - 11:50 a.m., Classroom No. 4, Bldg. 3072. (VTC.)

#### **ECE 8443. Pattern Recognition.** (3). Instr. Dr. N. Younan, MSU.

Classification, description, and structure of pattern recognition, patterns and features extractions, engineering approaches including statistical and syntactic, and signal processing applications. (Prereq.: MA 6533 or consent of instructor.)

Tu and Th, 8:00 a.m. - 9:15 a.m., Classroom No. 4, Bldg. 3072. (VTC.)

### Industrial Engineering

#### **IE 6543. Logistics Engineering.** (3). Instr. Dr. Eksioglu, MSU.

Analysis of complex logistics networks. Integration or supply, production, inventory, and lead times. Customer-supplier partnership. (Prereq.: IE 4613 or graduate standing in engineering.)

M, W, and F, 9:00a.m. - 9:50 a.m., Classroom No. TBA, Bldg. 3072. (VTC.)

#### **IE 6573. Process Improvement Engineering.** (3).

Instr. Dr. S. Bullington, MSU.

Introduction to quality and productivity improvement methodologies and tools. The design and implementation of continuous improvement systems in organizations.

M and W, 1:00 p.m. - 1:50 p.m., Classroom No. 2, Bldg. 3072. (VTC.)

#### **IE 8733. Decision Theory.** (3). Instr. Dr. S. Bullington, MSU.

A quantitative development of the decision-making process. Criteria for decision making. Treatment of risk under uncertainty and in conflict situation. (Prereq.: IE 4613.)

Tu and Th, 9:30 a.m. - 10:45 a.m., Classroom No. 3, Bldg. 3072. (VTC.)

### Mathematics

#### **MA 8203. Foundations of Applied Mathematics I.** (3).

Instr. Dr. W. Mastin, MSU.

Principles of applied mathematics including topics from perturbation theory, calculus of various, and partial differential equations. Emphasis of applications from heat transfer, mechanics, fluids.

M and W, 3:30-5:00 p.m., Classroom No. 4, Bldg. 3072

### Business

#### **ACC 8303. Survey of Accounting.** (3). Instr. Dr. N. Addy, 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:** \$719.25.

#### **BQA 8443. Statistical Analysis and Business Decision Making.** (3).

Instr. Dr. J. Sullivan, MSU.

Review of descriptive statistics, parametric inference procedures, analysis of variance, regression, nonparametric methods; business problem formulation for computer analysis using statistical packages.

MSU Internet. **TUITION:** \$719.25.

#### **EC 8103. Economics for Managers.** (3). Instr. Dr. J. Rezek, MSU.

Exposition of the fundamental theoretical and analytical tools of economics used by business managers engaged in decision making.

MSU Internet. **TUITION:** \$1,156.50.

**EC 2123. Principles of Microeconomics.** (3).

Instr. Dr. K. Rogers, MSU.

Introduction to microeconomics: emphasizes American industrial structure, demand and supply, pricing and output, income distribution, factor pricing, International trade.

MSU Internet. **TUITION:** \$976.50.**MGT 8063. Survey of Management.** (3). Instr. Dr. B. Spencer, 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:** \$719.25.**MGT 8122. Business Consulting.** (3). Instr. Dr. B. Spencer, MSU.

A group-based consulting project on strategic issues currently facing a participating organization.

MSU Internet. **TUITION:** \$479.50.**Term 1 (18 January – 9 March 2006)****BQA 8112. Business Case Analysis Using Statistics.** (2).

Instr. Dr. P. Srisupandit, MSU.

Descriptive statistics, data collection techniques estimation, hypothesis testing, analysis of variance, regression, time series, index numbers, forecasting, statistical process control applied to business case data. (Prereq.: BQA 2113 and BQA 3123 and a knowledge of SAS.)

MSU Internet. **TUITION:** \$771.00.**FIN 8112. Capital Acquisition and Allocation.** (2). Instr. Staff, 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:** \$771.00.**MGT 8111. Human Resources 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:** \$385.50.**Term 2 (20 March – 3 May 2006)****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. (Prereq.: BIS 8022.)

MSU Internet. **TUITION:** \$771.00.**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. (Prereq.: BIS 8022.)

MSU Internet. **TUITION:** \$771.00.**FIN 8122. Corporate Liquidity Analysis.** (2). Instr. Staff, MSU.

The role working capital plays in the viability of the firm and the financial management tools used to analyze and manage the firms' liquidity position.

MSU Internet. **TUITION:** \$771.00.

## Louisiana State University

### Civil Engineering

**CE 4750. Professional Issues and Concept Design in Civil Engineering.** (3). Instr. Dr. G. Hammitt, LSU.

Civil engineering design processes and systems, constructability and sustainability, use of consultants and contractors, project management, scheduling, economics and costing, ethical, healthy and safety, social, political and environmental consideration. This course can be taken for graduate level credit.

M, 3:30-6:30 p.m., Classroom No. 1, Bldg. 3072.

**Calendar: Spring Semester 2006**

17 Jan 06	Semester begins for LSU, TAMU, and ULM.
18 Jan 06	Semester begins for MSU.
24 Jan 06	Last day to drop a class from LSU without receiving a grade of "W."
31 Jan 06	Last day to drop a class from MSU and LSU without a grade.
3 Apr 06	Last day to drop a class from TAMU with no penalty (Q-drop).
3 Apr 06	Last day to withdraw from LSU.
20 Apr 06	Last day to withdraw from MSU.
2 May 06	Semester ends for TAMU.
3 May 06	Semester ends for MSU.
6 May 06	Semester ends for LSU.
12 May 06	Semester ends for ULM.

**Registration**

Registration will be held 1-16 December 2005 and 3-11 January 2006, 8:30 a.m. until 4:00 p.m., Building 3072 at ERDC.

**Tuition and Fees**

MSU – \$719.25/3 SCH (Except as noted for MBA classes)

LSU – \$870.00/3 SCH (Subject to change)

TAMU – \$1,799.28/3 SCH

ULM – \$463.25/3 SCH

Tuition and fees are payable at registration by check, money order, or a copy of an **approved** purchase request (DD Form 1556 for Corps employees).**New Students and Readmit Students****New students** enrolling in courses from MSU **MUST** have a copy of their undergraduate transcript mailed to the Graduate Institute prior to registration and **MUST** register by 14 December to ensure admission to the university before the semester begins. Students who have not been enrolled in classes at MSU for one semester (Spring or Fall) or more should also register by 14 December to ensure timely readmission to the university and enrollment in classes. **New students** enrolling in courses offered by MSU, LSU, and TAMU will have to pay an application fee of \$30, \$25, and \$50, respectively.**Withdrawals and Refunds**

Requests to withdraw from a course must be submitted in writing to the Director, 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. A list of books and sources will be provided at registration.

## 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

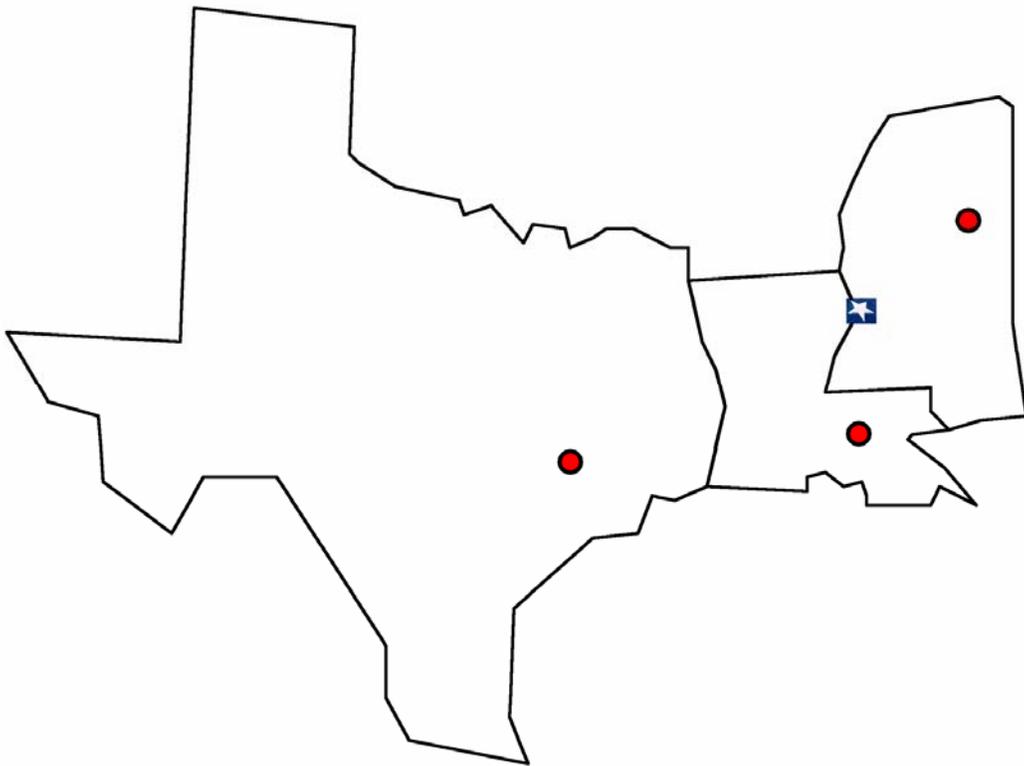
### Computer Science

**CSCI 305. Analysis of Algorithms.** (3). Instr. Dr. L. Smith, ULM. Tu and Th, 12:30 p.m. - 1:45 p.m., Classroom No. 4, Bldg. 3072. (VTC.)



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