MATH 697 Topics in Numerical Analysis. (3 Hours) Prerequisite: Departmental approval.
MATH 698 Topics in Logic and Foundations. (3 Hours) Prerequisite: Departmental approval.
MATH 699 Dissertation. (3 Hours) Prerequisite: Departmental approval. Research in Mathematics.

DEPARTMENT OF PHYSICS, ATMOSPHERIC SCIENCES AND GEOSCIENCE

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Faculty

Dr. M. Fadavi, Professor
Dr. E. Heydari, Associate Professor
Dr. M. Longmire, Associate Professor

The Department of Physics, Atmospheric Sciences and Geoscience has the major teacher training responsibility in the School of Science and Technology. This program leads to the (MST) degree in Science Education with a concentration in one of the following areas: (Astronomy, Biology, Chemistry, General Science, Physics and Physical Science). The Department also offers for credit graduate science education and science content courses for graduate students of other programs. Several courses are offered for inservice teachers and other educators for professional development. These courses are often used toward certification and further degrees.

Accreditation

This program is accredited by the National Council for Accreditation of Teacher Education (NCATE).

Program Objectives

1. To provide additional preparation for science teachers and science supervisors in scientific content and supervision techniques.
2. To enable teachers of science to gain insight into the kinds of science experiences that are relevant to the needs of today's youth.
3. To develop in science teachers an awareness of the modern trends and problems in science teaching.
4. To enrich current and potential science teachers and educators with content and pedagogy in science and science education areas.
5. To offer courses of use to different non-departmental graduate degree programs.

Admission Requirement

Hold a baccalaureate degree with a major or minor in one of the natural sciences from an accredited college or university. Student maybe admitted conditionally if the Graduate Record Examination (GRE) is not taken.

Degree Requirements
A total of 30 semester hours plus a thesis (6 hours), 33 semester hours plus a project (3 hours), or 36 semester hours with neither a thesis or project.

By the end of the first year, the student should complete the Graduate English Competency Examination (GECE). Students should take the Graduate Area Comprehensive Examination in all core science courses.

Master of Science in Teaching

Core Courses

Course	Title	Semester Hours
EDFL 515	Methods of Educational Research	3
EDFL 514	Elementary Statistics	3
EDFL 568	Curriculum Methods	3
	Hours	9

Science Education Core Courses

SCI 502	General Science for Teachers	3
SCI 507	Earth Science	3
SCI 513	Computer Applications in the Teaching of Science	3
SCI 522	Environmental Science	3
SCI 563	Problems and Issues in Science	3
SCI 581	Operation Physics I	3
	Hours	21
SCI 599	Thesis, *or*	6
SCI 587	Independent Study	3
	Science Elective, *or*	3
	Two Science Electives	6
	Total Hours	36

DESCRIPTION OF COURSES

SCI 502 General Science for Teachers. (3 Hours) A study of topics in astronomy, chemistry, geology, meteorology and physics.

SCI 507 Earth Science. (3 Hours) An exploratory course dealing with basic concepts in geology, meteorology, and astronomy.

SCIL 507 Earth Science for Teachers Lab. (1 Hour) Laboratory experiments designed to expand subject matter taught in SCi 507.

SCI 508 Cosmology for Non-Scientists. (3 Hours) A study of the structure, makeup origin, and evolution of the universe and objects in it.

SCI 509 Earth History (3 Hours) The course studies history of the continents and oceans and the changes to the atmosphere through time.

SCI 513 Computer Applications in the Teaching of Science. (3 Hours) This course includes computer concepts; programming in the Basic language; building modules for computer assisted instruction and computer aided instruction; problem solving on a microcomputer system.

SCI 515 Earth and Space Science (3 Hours) This course is the study of Earth Science, Geology, and Meteorology.

SCI 516 Physical Science I for Middle School Teachers (3 Hours) This course is the study of properties and reactions of matter.

SCI 517 Physical Science II for Middle School Teachers (3 Hours) This course is the study of Physics, Astronomy and Technology that includes: (in Physics) measurment, force, motion, energy, simple and compound machines, electricity and magnetism, sound, light and heat; (in Astronomy) stars in the night sky, solar system, lunar phases, eclipses, earth seasons, galaxies and universe.

SCI 518 Life Science for Teachers (3 Hours) This course is the study of biochemistry, the cell, genetics, organ systems, natural selection, diversity, ecology and the property and reaction of matter.

SCI 519 Environmental Science and Chemistry for Teachers (3 Hours).

SCI 520 Methodology for Science Teaching (3 Hours) This course includes exemplary teaching strategies and research-based methods, i.e. Inquiry-based learning, cooperative learning, and the use of technology.

SCI 522 Environmental Science. (3 Hours) A general study of environmental problems created by various kinds of pollution and the effects of man's bio-physical environment.

SCI 523 Seminar in Science (3 Hours) Provides the opportunity to discuss the most pertinent trends in science and to become familiar with current research.

SCI 524 Elements of Astronomy (3 Hours) Survey of solar and stellar systems, with emphasis on the historical and scientific development of astronomy.

SCI 525 Hands-on Activity in Astronomy (3 Hours) This course is support for instructional competency in astronomy in Mississippi.

SCI 551 Hands-on Universe in Mississippi I. (3 Hours) This course integrates mathematics, science and technology in the context of exciting astronomical explorations. This course addresses many of the goals set by the National Council of Teachers of Mathematics and the National Research Council for Math and Science Education.

SCI 563 Problems and Issues in Science. (3 Hours) Content in elementary science; aims and methods of instruction, new curricular developments.

SCI 581 Operation Physics I . (3 Hours) This course is the study of mechanics that includes: measurement, force and motion, simple machines and forces, and fluids.

SCI 552 Hands-on Universe in Mississippi II. (3 Hours) Prerequisite: SCI 551. This course integrates mathematics, science and technology in the context of exciting astronomical explorations. This course addresses many of the goals set by the National Council of Teachers of Mathematics and the National Research Council for Math and Science Education.

SCI 580 Science Technology and Environment (3 Hours) An overview of contemporary topics in science and technology. The scientific and technical materials will be covered in detail, then the social consequences of applying or misapplying that knowledge will be examined.

SCI 582 Operation Physics II. (3 Hours) This course is the study of sound and light that include: measurement, sound, behavior of light, color and vision.

SCI 583 Operation Physics III. (3 Hours) This course is the study of electricity and magnetism that include: measurement, electricity, magnets, and magnetism.

SCI 584 Operation Physics IV. (3 Hours) This Course is the study of modern physics that include: measurement, structure of matter, atoms, molecules, nuclei, elementary particles, and special and general relativity.

SCI 587 Independent Study. (1-3 Hours) For students who are actively working on special projects and consulting with their major professor.

SCI 592-592W Seminar in Meteorology. (3 Hours) Presentation and discussion of special topics and research in meteorology by staff members, students and guest lecturers.

SCI 599 Thesis (6 Hours). A minimum of 40 hours of research for the thesis must be scheduled. The thesis must show (a) mastery of the techniques of research, and (b) a very distinct contribution to the field under investigation and study.

SCI 601W Seminar in Environmental Science. (3 Hours) Advanced topics of special interest, current research, field trips, demonstrations and guest lecturers.

SCI 602 Construction of Teaching Materials for Secondary Science Instruction. (3 Hours) Special work in models, charts, graphs, photography, electrical apparatus, mechanical equipment, etc.

SCI 603 Special Topics in Science. (3 Hours) Topics of current interest, both theoretical and experimental.

SCI 604 Advanced Methods—Secondary School Science. (3 Hours) Experience with science teaching. Major trends in the new science courses and methodology programs.

SCI 605 Analysis of Science Curriculum. (3 Hours) A critical examination of contemporary and potential science curricular projects.

DEPARTMENT OF TECHNOLOGY

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Faculty
Dr. I. M. Omoregie, Professor
Dr. P. C. Yuan, Professor

The Department of Technology offers the Master of Science in Education and the Master of Science in Hazardous Materials Management. The Master of Science in Education degree with a concentration in technology education is designed to improve the competencies of technology educators and administrators in secondary and post-secondary schools.

Admission Requirements
Admission to the graduate degree program in Hazardous Materials Management and Technology Education is governed by the regulations of the Graduate School.

Hazardous Materials Management

Degree Requirements
The degree options are 30 semester hours plus a thesis; 33 semester hours plus a project; or 36 semester hours of course credit.

Course	Title	Semester Hours
ITHM 520	Introduction of Hazardous Materials Management	3
ITHM 523	Statistics/Data Analysis	3
ITHM 524	Public Issues in Hazardous Materials	3
ITHM 525	Natural Resources and Conservation	3
ITHM 529	Env Toxicology and Risk Assessment	3
	Hours	15

Elective Courses

ITHM 521	System Modeling	3
ITHM 522	Chemistry of Hazardous Materials	3
ITHM 526	Environmental Regulations	3
ITHM 527	Water and Wastewater Treatment	3
ITHM 528	Waste Minimization	3
ITHM 530	Industrial Waste Treatment and Tech.	3
	Total Hours	30, 33 or 36