ECO 590 Regional Economics. (3) A. Prerequisite: three hours of ECO. Analysis of patterns of regional growth and development. Use of economic models for regional forecasting and policy evaluation; the problems of marginal areas in developed economies.

EDF—Educational Studies
Dr. Michael A. Martin, Chair

EDF 103 Introduction to Education. (1) I, II. An exploration of the professional qualities and expectations of a teacher/educator. Roles, responsibilities and challenges in the field of education will be reviewed. Eight hours of field experiences in schools are required. For pre-education and non-education majors.

EDF 200 Schools and Our Society. (3) I, II. Prerequisite: Score accepted by the Kentucky Education Professional Standards Board on one of the approved tests: ACT, PPST, SAT, GRE. An introduction to social and cultural influences on schools, the purposes of schooling, the governance, financing, and administration of schools, and the role of the individual as an educator. 15 hours of field experience required.

EDF 203 Schooling and Society. (3) I, II. Prerequisite: score accepted by the Kentucky Education Professional Standards Board on one of the approved tests: ACT, PPST, SAT, GRE. Prerequisite or Corequisite: Satisfactory grade in EDF 103 or enrolled in EDF 103. An introduction to social and cultural influences on schools, the purposes of schooling, the governance, financing, and administration of schools, and the role of the individual as an educator. 12 hours of field experience required.

EDF 310 Transition to Education. (1-3) I, II. Transition to professional education at EKU. Required of students who have an equivalent transfer course for EDF 203.

EDF 319 Human Development and Learning. (3) I, II. Prerequisite: satisfactory grade in EDF 103; EDF 203 with grade of "C" or higher and a score accepted by the Kentucky Education Professional Standards Board on one of the approved tests: ACT; PPST; SAT; GRE. The study of theories and principles of human development and learning as applied to the classroom. Fifteen hours of field laboratory experiences. Credit not awarded to students with credit for EDF 320.

EDF 320 Human Development and Learning for Vocational Education. (3) I, II. The study of theories and principles of human development and learning as applied within vocational-industrial technical education classrooms. Credit not awarded to students with credit for EDF 319.

EDF 413 Assessment in Education. (3) I, II. Prerequisite: admission to teacher education. Principles and procedures in assessing and evaluating pupil growth in skills, attitudes, aptitudes, and understandings. Assessment construction, analysis, item analysis. Marking systems, and authentic assessment systems will be addressed.

EDO— Education Orientation
Dr. William Phillips, Dean

EDO 100 Academic Orientation. (1) I. Designed to orient the student to university academic life and afford background for career choice and preparation. Included are University regulations and calendar, catalog details, registration and preregistration, various career opportunities, and program requirements. Open to all students during their first two semesters of enrollment at EKU; beyond that open to students with fewer than 30 semester hours earned.

EET—Electricity and Electronics Technology
Dr. Vigyan Chandra, Coordinator

EET 251 Electricity and Electronics. (3) I, II. Prerequisite: Grade of at least "C" in MAT 095 or a minimum math ACT score of 18 or a minimum SAT math score of 490. Principles of basic electricity, circuit operation, and electronics. Topics include electrical components, measurements, power, properties of AC-DC, basic circuit laws, circuit simulation, magnetism, energy conversion, and rectification. 2 Lec/2 Lab.

EET 252 Digital Electronics. (3) I, II. Prerequisite: grade of at least "C" in MAT 090 or equivalent. A survey of digital electronics fundamentals and applications. Digital mathematics, logic families, logic gates, multiplexers, comparators, counters, decoders, displays, converters, memory systems, and microcomputer systems are covered in a combination of lecture, demonstration, and laboratory. 2 Lec/2 Lab.

EET 253 Microprocessor Systems. (3) I, II. Prerequisite/Corequisite: EET 252. The operation and application of the microprocessor in desktop and process control systems. Data, address, and control signals; memory expansion; digital and analog input and output ports; power control interface; and data communications are covered in the laboratory. 2 Lec/2 Lab.

EET 254 Machine Language for Microcontrollers. (3) A. Prerequisite/Corequisite: EET 252. Machine language programming for ROM based microprocessor based industrial controllers. Emphasis on software manipulation of I/O control devices in real-time, interrupt driven, process control environments. 2 Lec/2 Lab.

EET 257 Circuits and Electronic Devices. (3) I, II. Prerequisite: EET 251. Electrical circuits and theorems. A technical analysis of the characteristics of solid state devices and the common circuits that utilize these devices. Emphasis on problem solving supplemented by laboratory analysis of electronic circuits and devices. 2 Lec/2 Lab.

EET 302 PC Troubleshooting & Construction. (3) I, II. This course covers the construction, operation and troubleshooting of microprocessors, system memory, computer architecture, video types, monitors, hard drives, mice, cabling, notebook computers and printers as they relate to the running of current application programs. Building of computer systems specific to user requirements are covered in a combination of lecture, demonstration, and laboratory. 2 Lec/2 Lab.

EET 303 LANs & PC Communications. (3) A. Prerequisite: Grade of at least "C" in MAT 095 or a minimum math ACT score of 18 or a minimum SAT math score of 490. This course provides the participant with basic information on installing, troubleshooting and using microcomputer communication and local area network hardware and software. 2 Lec/2 Lab.

EET 305 Linear Electronic Circuits. (3) A. Prerequisite: EET 257. An analysis of electronic control circuits and devices to include both linear and nonlinear amplifiers. 2 Lec/2 Lab.

EET 343 Network Switches & Routers. (3) I. Prerequisite: EET 303. This course covers Cisco internetworking, switching, IOS, routing, VLAN's, access lists, and WAN protocols are covered in a combination of lecture, demonstration, and laboratory. 2 Lec/2 Lab.

EET 349 Applied Learning in CET/CEN (1-8) II. Prerequisite: departmental approval, sophomore (30-59 hours) or higher standing and minimum of 2.0 GPA. Work under faculty and field supervisors in placements related to academic studies in Computer Electronics Technology (CET) or Computer Electronic Networking (CEN). Transfer students must have completed at least 12 hours of coursework at EKU. A minimum of 80 hours work required for each academic credit.

EET 349 A-N Cooperative Study: CET/CEN. (1-8) I, II. Prerequisite: departmental approval, sophomore (30-59 hours) or higher standing and minimum of 2.0 GPA. Work under faculty and field supervisors in placements related to academic studies in Computer Electronics Technology (CET) or Computer Electronic Networking (CEN). 1-8 credit hours per semester or summer. Transfer students must have completed at least 12 hours of coursework at EKU. A minimum of 80 hours work required for each academic credit.

EET 350 Industrial Electronics I. (3) I. Prerequisite: EET 257. Principles of timing, power control circuitry, transducers, and programmable controllers in commercial and industrial applications. 2 Lec/2 Lab.

EET 351 Programmable Logic Controllers. (3) I, II. Prerequisite: EET 251. The study of programmable logic controllers (PLCs). PLC functioning theory, selection, wiring, and programming. 2 Lec/2 Lab.

EET 354 Microcomputer & Network Security. (3) A. Prerequisite: EET 303. System considerations involved in securing PCs and networks in a very dynamic environment using appropriate hardware and software. Computer viruses, encryption, VPNs, ACLs, firewalls, secure protocols. The course includes testing and configuring security on PCs and networks in a combination of lecture, demonstration, and laboratory. 2 Lec/2 Lab.

EET 395 Special Topics in CET/CEN. (2-3) A. Prerequisite: departmental approval. Emerging technologies in the area of Computer Electronics Technology (CET) and Computer Electronic Networking (CEN): networking system administration, microcomputers, electronics, hardware, network operating systems, scripting, security, computer industry standard certifications, will be covered in a combination of lecture, demonstration and laboratory. May be repeated up to a maximum of 9 hours provided subject matter differs each time. Lec/Lab.

EET 399 CET Capstone Project. (3) II. Prerequisite: departmental approval and sophomore standing with a minimum of 24 semester hours of EET coursework completed. A project and research oriented course which serves as a capstone experience for Computer Electronics Technology (CET). The design, implementation, analysis, and troubleshooting of electronic and computer technology related systems is emphasized.

EET 403 Advanced LANs and PC Communication. (3) II. Prerequisite: EET 303. This course will cover installation, configuration, troubleshooting and maintaining server set up. The participants will be given the opportunity to setup and run server operating systems with Ethernet hardware. 2 Lec/2 Lab.

EET 440 Fiber-optics & Communications. (3) A. Prerequisite: MAT 108 or higher, EET 251 and EET 257. Principles of communication over fiber and other media. Digital and analog data transmission. Modulation and multiplexing of data. Functioning of various fiber-optic system components. Safety, testing and troubleshooting of single and multi-mode systems. Design, simulation and implementation of communication circuits in a combination of lecture, demonstration, and laboratory. 2 Lec/2 Lab.

EET 452 Electrical Power & Drives. (3) II. Prerequisites: MAT 108 or higher, EET 251 and EET 257. Principles of electromagnetic induction as applied to the generation, distribution, conversion, control, and measurement of electrical power. Analysis of the electronics used for electrical drives controlling machinery and computer systems. Installation, programming and maintenance of digital drives are covered in a combination of lecture, demonstration, and laboratory. 2 Lec/2 Lab.

EET 499 CEN Capstone Project. (3) II. Prerequisite: departmental approval and senior standing. A project and research oriented course which serves as a capstone experience for Computer Electronic Networking (CEN). The design, implementation, analysis, and troubleshooting of networking, computers and electronics technology related systems, is emphasized.

EHS—Environmental Health Science
Dr. Lonnie Davis, Interim Chair

EHS 225 African/African-American Health Issues. (3) I. Cross listed as AFA 225. Provides the student with an understanding of the medical and public health issues relevant to the maintenance of health conditions both in the United States and Africa. Credit will not be awarded to students who have credit for AFA 225.

EHS 230 EHS Diseases and Hazards of Leisure. (3) II. Provides the student with an understanding of the biological, chemical and physical threats to health and life from the recreational, amusement, travel and tourist environments.

EHS 280 Introduction to Environmental Health Science. (3) A. Elements of environmental health, including water and waste treatment, air pollution, food sanitation, vector control, solid waste disposal, and general sanitation problems.

EHS 285 EHS Professional Standards. (1) A. Corequisite: EHS 335. Provides the student with the personal and professional tools to succeed as an environmental health professional. Information related to required professional certifications, ethical demands, and professional standards and practices will be provided.

EHS 290 Seminar in Environmental Health. (2) II. A. Prerequisite: departmental approval. Discussion and analysis of literature related to selected current environmental health problems.

EHS 300 Water Supplies and Waste Disposal. (4) I, II. Prerequisite: EHS 280. Prerequisite/Corequisite: BIO 320 or CLT 209 and CLT 211. Drinking water safety in both individual private systems and larger public systems. Maintenance of raw water quality. Water purification, delivery systems, and surveillance. Techniques for collection, treatment, and disposal of sewerage.

EHS 330 Environmental Control of Disease Vectors. (3) II. Prerequisite: BIO 121. The identification and control of arthropods, arachnids, rodents, and other vectors of disease. Review of significant vector borne diseases. Safe use of pesticides will also be discussed.

EHS 335 Hazardous and Solid Waste Management. (3) II. Prerequisites: CHE 111, 115 and EHS 280; or departmental approval. Corequisite: EHS 285. Nature of toxic and hazardous wastes and methods for their disposal to protect health and the environment and to prevent contamination of groundwater. The environmental health and safety aspects of solid waste collection, treatment and disposal, and regulations governing waste management are also covered.

EHS 340 Industrial Hygiene. (3) I, II. Prerequisites: BIO 121, CHE 111, 115 and EHS 280; or departmental approval. The impact of the workplace on safety and health, and methods for avoiding work-related illnesses. Emphasis will be on the evaluation and the control of the work environment to protect worker health.

EHS 345 Advanced Industrial Hygiene. (3) II. Prerequisite: EHS 340 or departmental approval. In-depth discussion of the chemical and physical hazards of the workplace and their evaluation and to provide hands-on experience in industrial hygiene sampling and analysis.

EHS 349 Applied Learning in Environmental Health Science. (1-6) A. Prerequisite: departmental approval. Work in placements related to academic studies. One to six hours credit per semester or summer. A minimum of 80 hours work required for academic credit.

EHS 349 A-N Cooperative Study: Environmental Health Science. (1-6) A. Prerequisite: departmental approval. Work in placements related to academic studies. One to six hours credit per semester or summer. A minimum of 80 hours work required for academic credit.

EHS 355 CBR Terrorism & Environmental Health. (3) II. This course will provide students with environmental health principles required to protect individuals and communities in times of war, general emergencies and disaster, both natural and human, due to chemical, biological and radioactive threats.

EHS 360 Air Pollution and Health. (4) A. Prerequisites: CHE 112, 116 and EHS 280; or departmental approval. Health effects of air pollution, including a discussion of the primary sources of airborne pollutants, their transport and transformation, the control of air pollution, state and national standards.

EHS 370 Risk Assessment and Environmental Epidemiology. (3) I, II. Prerequisites: EHS 280 and STA 215; or departmental approval. The use of data to define the health effects of exposed individuals or populations to hazardous materials and situations.

EHS 380 Food Hygiene. (3) I, II. Prerequisites: EHS 280 or departmental approval. A study of the health effects of food-borne disease, including an in-depth discussion of the physical, chemical, and biological contaminants that cause an estimated 76 million cases of food-borne illnesses annually in the U.S. An examination of the food processing and food service industry's failings and efforts to prevent food-borne illness will be the primary focus.

EHS 390 EHS Special Problems in Environmental Health. (1-4) A. Prerequisite: departmental approval. For independent work, or special workshops, or special topics as they relate to environmental health issues and problems. May be retaken for maximum of eight hours.

EHS 395 Environmental Problem Analysis. (3) II. Prerequisites: EHS 335, 340, and MAT 107 or 109; or departmental approval. Application of the student's knowledge gained from technical course work to analyze environmental problems. Emphasis is on logically solving environmental health issues that the student can expect when working in the field.

EHS 410 Radiological Health. (3) I. Prerequisites: EHS 280, MAT 107, and PHY 131. Corequisite: PHY 131. A discussion of the health effects from ionizing radiation, including radiation sources, detection, measurement, control, and safety devices.

EHS 425 Environmental Health Program Planning. (3) A. Prerequisites: EHS 280 and 335. Administration, planning, implementation, and evaluation of environmental health programs. Discussion of resources and promotional techniques, and the role of the environmental health specialist dealing with community, state, and regional agencies.

EHS 440 Environmental and Industrial Toxicology. (3) II. Prerequisites: CHE 112, 116 and EHS 280; or departmental approval. Health effects and nature of toxic substances with discussion of dose-response relationships, latency, target organs, and potential exposures in the environment.

EHS 460 Housing and Institutional Environments. (3) A. Prerequisite: EHS 280 or departmental approval. Corequisite: EHS 485. Discusses the requirements for healthful housing means of attaining and maintaining these requirements. Reviews environmental health concerns relating to day-care centers, schools, hospitals, nursing homes, and prisons. Describes surveillance, evaluative, and corrective methods.

EHS 463 Field Experience in Environmental Health. (6) A. Prerequisites: EHS 300, 335, 380, and departmental approval. Supervised and directed field experience in local, state, regional environmental health agencies, or with appropriate industries. Eight to twelve weeks full-time required depending on work place.

EHS 485 EHS Professional Practice Seminar. (1) A. Prerequisite: 90 hours. Corequisite: EHS 460. Provides the graduating student a certification and licensure review for their required state and national exams. The student will also be taught how to develop professional success strategies and long range career plans.

EHS 498 Independent Study in Environmental Health. (1-3) A. Prerequisite: student must have the independent study proposal form approved by faculty supervisor and department coordinator prior to enrollment. Opportunity for individual work on an environmental health research problem in a supervised situation.

ELE— Elementary Education
Dr. Michael A. Martin, Chair

ELE 322 Physical Education in the Elementary School. (2) I, II. The study of the role of movement for the elementary school child; philosophy, principles, purposes, and programs of elementary physical education. Educational dance, educational gymnastics, and educational games are emphasized.

ELE 361 Art in the Elementary Grades P-5. (3) I, II. Fundamental concepts of art education and those found in KERA. Exploration of art materials, processes, and activities for children in the elementary grades including those with special needs. Ten field/clinical hours.

ELE 362 Music Education for the Classroom Teacher. (3) I, II. Study and appraisal of teaching techniques, music literature, learning activities, curricular plans, and materials essential to the sequential development of musical learning in the elementary school. Ten field/clinical hours.

ELE 365 Health Education P-5. (2) I, II. A study of curriculum design, teaching/learning strategies, resources, and evaluation procedures in elementary school health education. Topics include drugs, mental health, family living, nutrition, fitness, consumerism, environment, disease, and personal health. Ten field/clinical hours.

ELE 445 Foundations of Reading/ Language Arts. (3) I, II. Cross listed as EMG 445. Prerequisites: junior standing, 2.5 GPA, and EDF 203. Corequisite or Prerequisite: EDF 319. An overview of reading/language arts components P-5, teacher competencies, organization and planning for instruction. Twenty field/clinical hours.

ELE 446 Reading and Language Arts P-5. (3) I, II. Prerequisites: EDF 319, EDF 413, ELE 445 with a grade of "C" or higher and admission to professional education. Prerequisite or Corequisite: SED 401. Emphasis on theory, curriculum, teaching techniques and materials, instructional planning, assessment and use of results. Twenty field/clinical hours.

ELE 490 Classroom Management in the Elementary Grades P-5. (3) I, II. Prerequisite: EDF 319, EDF 413 and admission to professional education. Prerequisite or Corequisite: SED 401. Critical examination of effective classroom management in grades P-5. Emphasis on theories, strategies, and applications through study, discussion, observation, and participation. Twenty field/clinical hours.

ELE 491 Mathematics in Elementary Grades P-5. (3) I, II. Prerequisites: EDF 319, EDF 413, MAT 202 with a grade of "C" or higher and admission to professional education. Prerequisite or Corequisite: SED 401. Methods and materials of teaching P-5 mathematics; emphasis on discovering and developing fundamental concepts as a foundation for problem solving. Twenty field/clinical hours.

ELE 492 Science in the Elementary Grades P-5. (3) I, II. Prerequisites: EDF 319, EDF 413 and admission to professional education. Prerequisite or Corequisite: SED 401. Modern materials and methods for teaching science in primary through grade five. Five discussion- laboratory hours per week. Twenty field/clinical hours.