

BALL STATE UNIVERSITY

ACADEMIC POSTING

2012-2013

VOLUME XLIV – 4

January 4, 2012

This posting may contain all or part of the following: new, revised, and dropped programs, courses and prefixes. The posting period begins January 7, 2012. If no demurrer is received within ten school days, the changes will be certified for implementation. *The effective date for implementing undergraduate materials posted after April 16, 2012 is Fall Semester 2013. Graduate materials posted after April 16, 2012 have an implementation date of Fall Semester 2014.*

MILLER COLLEGE OF BUSINESS

Department of Information Systems and Operations Management

BUSINESS EDUCATION (BED)

Revised:

592 Managing Work-Based Learning Programs (3) Special knowledge and techniques for managing laboratory, cooperative, internship, and other work-based learning programs at both the secondary and postsecondary levels.

593 Philosophy, Organization, and Administration of CTE (3) The principles upon which CTE is organized, administered, and supervised; federal and state regulations; agencies that provide delivery systems for CTE; vocational rehabilitation and programs for persons with special needs.

600 Occupational Experience Internship (1-8) Approved full-time employment in an occupation where students perform supervised work. Each hour of credit requires 375 hours of approved, supervised, paid employment and submission of various employment reports by the intern.

Prerequisite: permission of the program coordinator.

A total of 8 hours of credit may be earned.

Open only to students seeking a CTE license addition offered through the department.

616 Research Methods (3) The concepts and methodology used in content area research; introduction to research design, methodology, research limitations, and proposal preparation; analysis of completed research in the content area; determination of needed content area research at the secondary and postsecondary levels.

620 Improvement of Instruction with Technology (3) Research, issues, strategies, and methods for improvement of instruction in content area teaching with technology at the

secondary and postsecondary levels.

622 Instructional Materials and Strategies for Improvement of Instruction (3) Methods, materials, and strategies for improvement of instruction in content area teaching at the secondary and postsecondary levels.

625 Problems and Issues (3) Identification of the problems and issues impacting the content area and possible solutions at the secondary and postsecondary levels; assessment of the significance of economic, legislative, and societal events impacting the content area at the secondary and postsecondary levels.

COLLEGE OF SCIENCE AND HUMANITIES

Department of Anthropology

ANTHROPOLOGY (ANTH)

Revised:

550 Ethnographic Field School (3-12) An intensive immersion in the methods of field research in cultural anthropology. Emphasizes problem formulation, observation, interviewing, writing, and interpretation of field data. Field schools are intended to provide specific skills that result in an ethnographic report.

Prerequisite: permission of the instructor.

A total of 12 hours of credit may be earned.

Department of Biology

BIOLOGY (BIO)

New:

499 Biology Undergraduate Symposium (1) Prepares students for further studies or employment in the profession by developing a career plan, examining professional ethics, and establishing a professional identity. Evaluates student proficiency in the biological sciences.

Prerequisite: BIO 111 and 112 and 210 and 214 and 215 and 216 and 217.

Revised:

215 Cell Biology (4) An introduction to the biology of the cell, including cell differentiation and growth, the nature of the organization of the cell, basic bioenergetics and enzyme function, cell environment, membrane structure and function, cell metabolism, and the work performed by cells.

Prerequisite: BIO 111 and 112.

448 Biometry (3) Principles and applications of statistics to biological problems. The use of parametric and nonparametric tests of significance in the analysis of data and the interpretation of experiments.

548 Biometry (3) Principles and applications of statistics to biological problems. The use of parametric and nonparametric tests of significance in the analysis of data and the interpretation of experiments.

Not open to students who have credit in BIO 448.

BOTANY (BOT)

Dropped:

460 Plants and Their Allies (4)

560 Plants and Their Allies (4)

Department of Computer Science

COMPUTER SCIENCE (CS)

Dropped:

233 Microcomputer System Architecture (3)

236 Computer Database Techniques (3)

276 Survey of Computer Operating Systems (3)

Revised:

524 Design and Analysis of Algorithms (3) Topics include: analysis of algorithms; dynamic programming; probabilistic algorithms, examples of geometric, combinatorial and graph algorithms, pattern matching; introduction to NP-completeness. Hours do not apply to master's degree in computer science. Before enrolling, a student is expected to

have taken an undergraduate data structures course and a calculus course.

Not open to students who have credit in CS 324.

539 Current Topics (3) In-depth study of a topic taught in a seminar format. Topics will be posted in the department before registration.

Prerequisite: permission of the instructor.

555 Data Mining (3) Topics include data preprocessing, clustering analysis, data classification, mining association rules, data mining and database, complex data mining, Web mining, new application in data mining such as intrusion detection and bio-informatics. Before enrolling, a student is expected to have taken CS 524 or undergraduate work consisting of two semesters of programming in an algorithms course.

Not open to students who have credit in CS 455.

556 Image Processing (3) Project based, dealing with basic principles of digital image processing and computer vision. Topics: digital image formats, geometric operations on digital images, filtering, histogramming, binarization of grayscale images, labeling binary images, perimeter and area determination, thinning operations, object recognition using global features, edge detection processes, and other topics as time permits. Before enrolling, a student is expected to have taken CS 524 or undergraduate work consisting of two semesters of programming in an algorithms course.

Not open to students who have credit in CS 456.

689 Research Methods in Computer Science (3) Discussions on research areas in computer science, scientific methods of research, and dissemination of research. Requirements include presentations and written reports that demonstrate proficiency in presentation tools and techniques, statistical and experimental design techniques, and library and literature searches. Intended for students after their first semester of master's level study.

Prerequisite: permission of the department chairperson.

690 Software Engineering (3) Software engineering principles and concepts. The software life cycle, structured specifications, design tools and techniques, software reliability, and verifying program correctness. Intended for students after their first semester of master's level study.

Prerequisite: permission of the department chairperson.

Not open to students who have credit in CS 496 or 498.

691 Software Requirements and Design (3) Methods, tools, and notations for requirements capture, analysis, and design. Unified Modeling Language (UML), logic and algebraic specification, prototyping, use cases, domain modeling, software architecture, design patterns, refactoring, software reuse.

Prerequisite: CS 690 or 496 or 498.

692 Software Verification and Validation (3) Concepts and techniques for testing software; unit, integration, system, and regression testing; test coverage, test case generation, tools for automated testing. Verification of nonfunctional properties.

Prerequisite: CS 690 or 496 or 498.

Department of Criminal Justice and Criminology

CRIMINAL JUSTICE AND CRIMINOLOGY (CJC)

Revised:

309 Juvenile Justice/Delinquency (3) Examination of societal explanations for and treatment of juvenile delinquents including the role of families, schools, police, courts, and correctional institutions.

Prerequisite: CJC 220 and 221 and 230 and 240 and 250 and sophomore standing, or permission of the department chairperson.

312 Victimology (3) Criminological examination of victims including victims' reactions and various responses made by the criminal justice system and other societal agencies.

Prerequisite: CJC 220 and 221 and 230 and 240 and 250 and sophomore standing, or permission of the department chairperson.

331 Organized Crime in America (3) Nature and structure of organized crime in America with special emphasis on the history and changing images of organized crime, its operation and activities, and programs for control.

Prerequisite: CJC 220 and 221 and 230 and 240 and 250 and sophomore standing, or permission of the department chairperson.

332 Crisis Intervention in CJC (3) Study of theoretical and practical bases for accurately assessing and responding to crises that are unique to the criminal justice profession.

Prerequisite: CJC 220 and 221 and 230 and 240 and 250 and sophomore standing, or permission of the department chairperson.

333 Police Systems/Organizations (3) Examination of issues and developing trends confronting the management and administration of police in the United States. Emphasizes developments in the provision of law enforcement and social services by police at the local, state, and federal level.

Prerequisite: CJC 220 and 221 and 230 and 240 and 250 and sophomore standing, or permission of the department chairperson.

340 Institutional Corrections (3) In-depth inquiry into the function, structure, and operation of American adult and juvenile correctional institutions.

Prerequisite: CJC 220 and 221 and 230 and 240 and 250 and sophomore standing, or permission of the department chairperson.

341 Community Corrections (3) Organization and operation of community-based correctional programs throughout the United States. Topics include probation, parole, halfway houses, group homes, diversion, restitution, and community service programs emphasizing the most popular programs and practices.

Prerequisite: CJC 220 and 221 and 230 and 240 and 250 and sophomore standing, or permission of the department chairperson.

350 Criminal Evidence (3) Examines the rules of evidence as applied in criminal investigations and criminal court with a discussion of relevant issues and legal standards.

Prerequisite: CJC 220 and 221 and 230 and 240 and 250 and sophomore standing, or permission of the department chairperson.

351 Criminal Law (3) Purposes and functions of substantive criminal law, historical foundations and limits of criminal law. Emphasizes Indiana criminal law.

Prerequisite: CJC 220 and 221 and 230 and 240 and 250 and sophomore standing, or permission of the department chairperson.

Department of English

ENGLISH (ENG)

Revised:

328 Language and Gender (3) Offers a detailed examination of the relationship between language and gender. Students explore how individuals use linguistic resources to construct gender identities through analysis of language, including pronunciation, conversational norms, and narrative styles.

410 Advanced Screenwriting (3) Advanced screenwriting for television, film, or new media, with emphasis on developing scripts for production.

Prerequisite: ENG 310.

A total of 6 hours of credit may be earned, but no more than 3 in any one semester or term.

Department of Geography

GEOGRAPHY (GEOG)

Revised:

410 Broadcast Meteorology (3) Survey of weathercasting including history, current practice, and presentation techniques. Also examines methods for communicating scientific information to non-scientists. Includes a practicum where students present forecasts.

Prerequisite: GEOG 330.

490 Field Observation of Severe Local Storms (6) Multiweek field trip to the Great Plains region to forecast, observe, and document thunderstorms and related phenomena such as lightning, hail, and tornadoes. Trip is preceded by a series of lectures on storm behavior, extreme weather forecasting, and safe chasing techniques.

Prerequisite: permission of the instructor.

535 Satellite and Radar Forecasting (3) Study of the tools

used to remotely sense and analyze the atmosphere, including meteorological satellites, Doppler radar, and forecast computer models. Emphasis is on the applications of satellite, radar, and computer model products to short and medium range weather forecasting. Includes an overview of forecast techniques and a forecasting practicum.

Prerequisite: GEOG 330 or 530 and MATH 165 and PHYC 120.

Not open to students who have credit in GEOG 435.

550 Mesoscale Meteorology (3) Survey of mesoscale-related phenomena of the atmosphere, including thunderstorms, tornadoes, and lake-effect snow. Includes information about forecasting the occurrence and evolution of such phenomena with tools used by operational meteorologists.

Prerequisite: GEOG 330 or 530.

590 Field Observation of Severe Local Storms (6)

Multiweek field trip to the Great Plains region to forecast, observe, and document thunderstorms and related phenomena such as lightning, hail, and tornadoes. Trip is preceded by a series of lectures on storm behavior, extreme weather forecasting, and safe chasing techniques.

Prerequisite: permission of the instructor.

Department of Geological Sciences

GEOLOGY (GEOL)

New:

434 Applied Biostratigraphy (3) Advanced undergraduate course designed to provide practical experience in geologic problem solving in energy and oceanographic fields. Intended as an advanced elective which will provide an immersion opportunity for geology and earth science majors. Focused on the use of microfossils to solve correlation and paleoecological problems, primarily in the subsurface. Run as a semester length course (usually during the fall semester) and involves work in the Ball State University Biostratigraphy Laboratory.

Prerequisite: GEOL 409 or permission of the instructor.

534 Applied Biostratigraphy (3) Advanced graduate course designed to provide practical experience in geologic problem solving in energy and oceanographic fields. Intended as a course which will provide research experience in biostratigraphy for masters and doctoral level students. Focused on the use of microfossils to solve correlation and paleoecological problems, primarily in the subsurface. Run as a semester length course (usually during the fall semester) and involves work in the Ball State University Biostratigraphy Laboratory.

Prerequisite: GEOL 509 or permission of the instructor.

Not open to students who have credit in GEOL 409.

Department of Mathematical Sciences

MATHEMATICAL SCIENCES (MATH)

Dropped:

101 Foundations in Mathematical Reasoning for Elementary Teachers (3)

Revised:

108 Intermediate Algebra (3) Reviews number sense, fundamental concepts of algebra, including rules for expressions and equations, linear and quadratic equations, relations and functions, integer exponents, radicals, and systems of equations. Offered credit/no credit only.

Prerequisite: two years of college preparatory mathematics in high school or equivalent.

Not open to students who have credit in MATH courses numbered higher than 108 except MATH 125.

111 Pre-Calculus Algebra (3) Reviews fundamental concepts of algebra; covers functions and their graphs, linear, power, quadratic, exponential, logarithmic, polynomial, and rational functions.

Prerequisite: MATH 108, appropriate score on the SAT/ACT, or appropriate scores on the mathematics placement test, or permission of the department chairperson.

Not open to students who have credit in MATH 132 or 161 or 165.

166 Calculus 2 (4) Standard techniques of integration, applications of the integral, numerical integration, sequences and series. Includes the use of graphing calculators and computer software.

Prerequisite: C- or better in MATH 165 or permission of the department chairperson.

181 Elementary Probability and Statistics (3) Algebra-based introduction to statistical applications through descriptive methods, probability, normal distributions, confidence intervals, hypotheses tests, regression, and correlation. Misuses of statistics and common probability misconceptions are discussed. Statistical experiments and simulations are conducted. Technology use is integrated throughout.

Prerequisite: C- or better in MATH 108, or appropriate score on the SAT/ACT, or appropriate scores on the mathematics placement test, or permission of the department chairperson.

215 Discrete Systems (4) Topics from discrete mathematics, including formal logic, methods of proof, set theory, relations, recursion, combinatorics, and graph theory. A systematic development of number systems via equivalence classes is included as an application of these topics.

Prerequisite: C- or better in MATH 162 or 165, or permission of the department chairperson.

217 Linear Algebra (4) Theory and application of systems of linear equations, vector equations, linear transformations, vector spaces, and inner product spaces. Includes the use of computer software.

Prerequisite: C- or better in MATH 162 or 165, or permission of the department chairperson.

221 Probability and Statistics (3) Elementary probability theory, random variables, discrete and continuous probability distributions. Theory and applications of descriptive and inferential statistics. Statistical software and graphing calculator use is integrated throughout the course.

Prerequisite: C- or better in MATH 162 or 165, or permission of the department chairperson.

250 Pre-College Mathematics from an Advanced Viewpoint (3) In-depth treatment of concepts underlying common topics in the middle and high school mathematics curriculum. Topics include number systems, polynomial and transcendental functions, analytic geometry, theory of equations, and measurement.

Parallel: MATH 150 and 166 and 215.

Open only to mathematics teaching majors.

251 Introduction to Mathematics of Finance (2) Mathematical topics in finance as expected to be useful in financial decision-making in the future. Topics will include compound and simple interest, savings, mortgages, loans, equity, annuities, equations of value, yield rates, amortization, sinking funds, bonds, and current topics in finance as time permits. Emphasis will be on fundamental principles, calculations, and practical applications.

Prerequisite: C- or better in MATH 111 and 112, or appropriate score on the SAT/ACT, or appropriate scores on the mathematics placement test, or permission of the department chairperson.

259 Introduction to Mathematical Software (3) Basic introduction to mathematical software currently used for solving math-related problems on computers. Includes a regularly scheduled computer laboratory.

Prerequisite: C- or better in MATH 215 or permission of the department chairperson.

267 Calculus 3 (4) Multidimensional calculus and its applications. Topics include three-dimensional vector calculus, Gauss's theorem, Green's theorem, and Stoke's theorem. Includes the use of graphing calculators and computer software.

Prerequisite: C- or better in MATH 166 or permission of the department chairperson.

311 Algebraic Structures (3) Consideration of the basic algebraic structures: groups, rings, integral domains, and fields. Examples of these structures and elementary proof will be emphasized as will polynomials over rings, integral domains, and the fields of real and complex numbers.

Prerequisite: C- or better in MATH 215 and 217 or permission of the department chairperson.

320 Probability (4) Probability theory for discrete and continuous sample spaces, random variables, density functions, distribution functions, marginal and conditional distributions, mathematical expectation, moment-generating functions, common distributions, sampling distribution theory, central limit theorem, t, chi-square, and F distributions.

Prerequisite: C- or better in MATH 166 or permission of the department chairperson.

Parallel: MATH 215.

321 Mathematical Statistics (4) Point and interval estimation, maximum likelihood, Neyman-Pearson Lemma, likelihood ratio tests, classical tests of significance, goodness-of-fit, contingency tables, correlation, regression, nonparametric methods, Bayesian methods.

Prerequisite: C- or better in MATH 320 or permission of the department chairperson.

331 Technology in the Teaching of Secondary Mathematics (3) The use of technology in the teaching of secondary and middle school mathematics, such as spreadsheets, calculators, algebraic or geometric modeling tools, educational software, and World Wide Web applications.

Prerequisite: C- or better in MATH 250; admission to Teacher Education; permission to enroll in 300/400-level professional education courses.

345 Survey of Geometries (4) A comparative study of Euclidean and non-Euclidean geometries, their respective histories and technologies, and their applications in mathematics, the sciences, and modern life.

Prerequisite: C- or better in MATH 166 and 215 and 217 or permission of the department chairperson.

351 Mathematics of Finance (4) Mathematical theory of compound interest, force of interest, annuities, equations of value, yield rates, amortization, sinking funds, bonds, market derivatives, depreciation, and current topics in finance.

Prerequisite: C- or better in MATH 165 and 251 or permission of the department chairperson.

Parallel: MATH 166.

362 Numerical Analysis 1 (3) Topics include error analysis, locating roots of equations, interpolation, numerical differentiation and integration, spline functions, smoothing of data. Includes programming of numerical algorithms.

Prerequisite: C- or better in MATH 162 or 166; and MATH 259 or CS 120; or permission of the department chairperson.

363 Numerical Analysis 2 (3) Topics include direct and iterative methods for solving systems of linear equations, eigenvalue problems; minimization of functions and linear programming. Includes programming of numerical algorithms.

Prerequisite: C- or better in MATH 217 and 362 or permission of the department chairperson.

371 Intermediate Analysis (3) Introduction to basic concepts of analysis: the real numbers, sequences, continuous functions, the derivative, and the Riemann integral.

Prerequisite: C- or better in MATH 166 and 215, or permission of the department chairperson.

374 Differential Equations (3) Introduction to nth-order ordinary differential equations, equations of order one, elementary applications, linear equations with constant coefficients, nonhomogeneous equations, undetermined coefficients, variation of parameters, linear systems of equations, and the Laplace transform. Use of standard computer software.

Prerequisite: C- or better in MATH 162 or 166 or permission of the department chairperson.

377 Complex Analysis (3) Algebra and geometric representation of complex numbers, properties of complex analytic functions, contour integration, power series and Laurent series, poles and residues, conformal mapping, and applications.

Prerequisite: C- or better in MATH 267 or permission of the department chairperson.

522 Theory of Sampling and Surveys (3) Survey designs; simple random, stratified, cluster, and systematic sampling; ratio estimates; regression estimates; cost and variance functions.

Prerequisite: MATH 321 or the equivalent.

Not open to students who have credit in MATH 422.

559 Models in Financial Economics (3) Mathematical and economic analysis of financial instruments and the management of financial and investment risk.

Prerequisite: MATH 320 or 620 and 351 or 551; or permission of the department chairperson.

Not open to students who have credit in MATH 459.

Department of Modern Languages and Classics

SPANISH (SP)

Dropped:

303 Grammar (3)

New:

305 Grammar for Heritage Speakers (3) A grammar course designed for heritage or native speakers of Spanish.

Prerequisite: SP 202.

Open only to heritage or native Spanish speakers (as determined by the department chairperson).

Revised:

301 Conversation and Composition (3) Extensive practice in oral and written Spanish to increase proficiency and authenticity through activities, discussion, and original composition.

Prerequisite: SP 202.

Department of Political Science

POLITICAL SCIENCE (POLS)

Revised:

445 Advanced Litigation and Alternative Dispute Resolution (3) Serves as a capstone course for legal studies students going beyond the introductory litigation class to immerse students in the trial and alternative dispute resolution

processes. Students will conduct mock trials, motion hearings, discovery conferences, negotiations, mediations, and arbitrations, as well as create trial exhibits. Class emphasizes concrete application of classroom theories and concepts to real world situations.

Prerequisite: POLS 141 and 242 and 243, or permission of the program director.

Open only to legal studies majors.

Department of Psychological Science

PSYCHOLOGICAL SCIENCE (PSYS)

Revised:

367 Introduction to Neuroscience (3) A biological systems approach to cognition and behavior. Emphasizes biological aspects of the central nervous system leading to neuropsychological processes in the brain.

Prerequisite: PSYS 100.

Department of Social Work

SOCIAL WORK (SOCW)

Revised:

200 Social Work Practice 1 with Field Experience (3) Focuses on fundamental communication and relational skills used by entry-level generalist social work practitioners. Concurrent field experience required.

Prerequisite: SOCW 100; or permission of the department chairperson.

Open only to social work majors and minors and family life educator certification candidates.

220 Social Welfare Policy 1 (3) Introduces the historical development, mission, and philosophy of social welfare in the United States with a focus on the analysis of current social welfare programs. Focuses on economic, religious, political, and other socio-cultural influences on contemporary welfare policies and services.

Prerequisite: SOCW 100; or permission of the department chairperson.

Open only to social work majors and minors and family life educator certification candidates.

300 Social Work Practice 2 with Field Experience (3) Introduces entry-level practice methods with organizations and communities. Practice methods of engagement, assessment, intervention planning and implementation, and evaluation. Concurrent field experience required.

Prerequisite: PSYS 100; SOCW 200, 220, 230; or permission of the department chairperson.

Open only to social work majors.

320 Social Welfare Policy and Programs 2 (3) Emphasizes policy formation and program development, implementation and evaluation used by entry-level social work practitioners.

Prerequisite: SOCW 200, 220, 230; or permission of the department chairperson.

Open only to social work majors.

340 Research in Social Work 1 (3) Introduces qualitative and quantitative research methods, knowledge, and skills used by a Bachelor of Social Work degreed practitioner to evaluate practice effectiveness. Focuses upon the importance of research ethics in protecting human subjects.

Prerequisite: SOCW 200, 230; or permission of the department chairperson.

Open only to social work majors.

370 Selected Aspects of Social Work Practice (3-6)

Explores social work practice with selected populations and within specific fields of practice.

Prerequisite: SOCW 100, 200, 220, 230; or permission of the department chairperson.

A total of 12 hours of credit may be earned, but no more than 6 in any one semester or term.

Open only to social work majors.

400 Social Work Practice 3 (3) Introduces methods, knowledge, professional values, and competencies used in entry-level social work practice with groups. Concurrent field experience required.

Prerequisite: SOCW 300, 320, 330, 340; or permission of the department chairperson.

Prerequisite recommended: ANTH 311 or COMM 290 or EDMU 205 or SOC 421; ANTH 341 or PSYS 324 or SOC 235 or WGS 210.

Open only to social work majors.

410 Social Work Practice 4 (3) Introduces methods, knowledge, professional values, and competencies for entry-level practice with individuals and families. Focuses on practice methods of assessment, intervention planning and implementation, and evaluation. Concurrent field experience required.

Prerequisite: SOCW 300, 320, 330, 340; or permission of the department chairperson.

Prerequisite recommended: ANTH 311 or COMM 290 or EDMU 205 or SOC 421; ANTH 341 or PSYS 324 or SOC 235 or WGS 210.

Open only to social work majors.

440 Research in Social Work 2 (3) Focuses upon statistical measurement and data analysis used by a Bachelor of Social Work degree practitioner to evaluate practice and program effectiveness. Introduces basic concepts of descriptive and inferential statistics, data entry, and analysis using SPSS.

Prerequisite: SOCW 220, 340; MATH 125 or completion of core math requirement; or permission of the department chairperson.

Open only to social work majors.

490 Independent Study in Social Work (1-3) Topic to be chosen and investigated in consultation with an instructor with special competence in the subject involved.

Prerequisite: permission of the department chairperson.

A total of 12 hours of credit may be earned, but no more than 3 in any one semester or term.

TEACHERS COLLEGE

Department of Educational Psychology

EDUCATIONAL PSYCHOLOGY (EDPS)

Revised:

411 Development of Creative Thinking (3) Theories and strategies for fostering the creative self and developing creative thinking. Analyzes the effects of personality characteristics and of various biological, cognitive, motivational, and environmental conditions on the development of creative thinking.

421 Identification and Evaluation of Gifted and Talented Students (3) Explores in-depth past and current practices of identifying gifted students. Topics include measurement and assessment issues implicit in the identification process of gifted students and their programs.

Prerequisite: EDPS 420.

423 Investigating the Social and Emotional Needs of Gifted Students (3) Examination of the research related to gifted students and the social and emotional dimensions that are unique to this population. Emphasis is placed on understanding the lived experiences of gifted children as well as social interventions and curricular strategies that can be employed within various educational environments.

425 Models and Strategies for Gifted Learners (3) Examination of the theoretical models and strategies used in differentiation of instruction for gifted students. Part of the sequence for the license in gifted education. Students learn models and the instructional strategies necessary for their implementation. In addition, they create their own unit based on one of the models studied.

Prerequisite: EDPS 420.

496 Practicum in Gifted Education (3) Supervised teaching and laboratory experience with children in educational settings. Meets teaching licensure requirements.

Prerequisite: EDPS 420.

Open only to students in a gifted and talented program or with permission of the instructor.

499 Independent Study: Educational Psychology (1-6) Individually planned experiences, extensive independent research in educational psychology.

Prerequisite: permission of the department chairperson.

A total of 6 hours of credit may be earned.

623 Investigating the Social and Emotional Needs of Gifted Students (3) Examination of the research related to gifted students and the social and emotional dimensions that are unique to this population. Emphasis is placed on understanding the lived experiences of gifted children as well as social intervention and curricular strategies that can be employed with various educational environments.

625 Models and Strategies for Gifted Learners (3)

Examination of the theoretical models and strategies used in differentiation of instruction for gifted students. Part of the sequence for the license in gifted education. Students learn models and the instructional strategies necessary for their implementation. In addition, they create their own unit based on one of the models studied.

Prerequisite: EDPS 420 or 520.

730 Introduction to Nonparametric Statistics (3) Focus on statistical methods appropriate for data in which standard assumptions such as normality and equality of variance are not met. Covers approaches for problems from one sample estimates of location to nonparametric multivariate techniques such as factor analysis. Students will learn about methods based on ranks, permutation tests, and the bootstrap.

Prerequisite: EDPS 641 or 642.

740 Categorical Data Analysis (3) A survey of statistical methods specifically designed for categorical variables, including chi-square, log-linear models, logistic regression, regression for count variables, and survival analysis.

Prerequisite: EDPS 641 or 642.

741 Applied Regression Analysis for the Social Sciences (3)

A presentation of the rationale of linear regression, its application to the analysis of educational and psychological data, and its relationship to other statistical techniques such as the analysis of variance, discriminant analysis, and factor analysis.

Prerequisite: EDPS 641 or 642.

742 Multivariate Statistical Techniques (3) A survey of the mathematical basis of four methods of multivariate analysis (the discriminant function, the various factor analytic models, the multivariate analysis of variance, and multiple regression) and their relationships to one another. Primary emphasis on practical applications to statistical analysis of educational and psychological data.

Prerequisite: EDPS 641 or 642.

Prerequisite recommended: EDPS 741.

743 Introduction to Factor Analysis (3) The mathematical rationale on which the various factor analytic models are based, the relationship of such models to each other and to such other forms of multivariate analysis as discriminant analysis, the multivariate analysis of variance, and multiple regression.

Prerequisite: EDPS 641 or 642.

744 Structural Equation Modeling (3) Focuses on the application of covariance structure models to a variety of research problems. Students will learn about the major structural equation models and how to apply them using multiple software packages.

Prerequisite: EDPS 641 or 642.

Prerequisite recommended: EDPS 741.

746 Theory of Measurement (3) Introductory study of major principles underlying psychometric theory including true score models, reliability, validity, norms, scaling, item analysis, and

instrument construction. Fundamentals of classical test theory supply background for topics in modern test theory such as item-response models.

Prerequisite: EDPS 641 or 642.

754 Seminar in Neuropsychology (3) Introduces advanced materials, procedures, and research in clinical neuropsychology. Emphasizes selected neurologic disorders, methods of assessment, rehabilitation and professional issues.

Prerequisite: EDPS 652, 656.

785 Multilevel Statistical Modeling (3) Students will learn the most recent statistical models for multilevel data. Methods are appropriate for datasets in which individuals are sampled in clusters, where the assumption of independence is likely to be violated. Surveys multilevel techniques appropriate for ANOVA, regression, categorical, and multivariate data.

Prerequisite: EDPS 641 or 642, and 741.

Department of Elementary Education

EDUCATION: ELEMENTARY (EDEL)

Revised:

260 Early Childhood Curriculum and Instruction (3)

Focuses on knowledge and skills necessary to design and implement a curriculum for young children. Integrated learning, emergent curriculum, and project work are emphasized.

Ron Murphy, Associate Director
Office of Academic Systems