Technique and skill training for pianists in augment physical function and expand the qualitative range of performance in a wide variety of settings and movement expression and function. The course and movement phrases. Additional emphasis on graphic elements, devices, and musical or sound composer relationship.

302C Advanced Composition (2)
Prereq: 305C or perm. The synthesis of choreographic elements, devices, and musical or sound choices into studies having a sense of form and content.

302C Advanced Composition (2)
Prereq: 305C or perm. Further development of 302C.

304D Jazz Dance Technique III
Refinement of jazz dance skills through a more complex series of exercises, spatial progressions, and movement phrases. Additional emphasis on performance quality, dynamics, and range of motion.

310 Accompaniment for Dance (2)
Prereq: 111 or perm. Basic problems in accompanying dance and analysis of dance forms related to accompaniment.

311 Midi Composition for Dancers (3)
This course is about creating musical compositions using a computer sequencer and sample-based synthesizers. The primary objectives are gaining a working knowledge of MIDI and investigating the qualities and parameters that are basic to music composition and how they relate to dance composition and performance.

312 Music for Dance II (3)
Prereq: 111 or equiv. Also for music composition majors who wish to write for dance theater. History of music for dance. Choreographer-composer relationship.

313 Dance Notation I (3)
Prereq: perm. Principles of dance notation.

315A Laban Movement Analysis I
This course surveys the movement analysis theories of Rudolph Laban. Particular attention is given to identifying the dynamics and spatial relationship of movement expression and function. The course includes movement observation, description and practice in a wide variety of settings and applications. No previous dance experience is required.

318 Collaborative Skills for the Dance Musician (2)
Technique and skill training for pianists in accompanying ballet and modern dance techniques. Includes class and lab sessions.

320 Dance Technique III (2)
Prereq: 220 or equiv. (A) modern dance, (B) ballet, (C) jazz.

330 Dance Movement Lab (1–5)
Prereq: perm. Addresses individual problems related to the production of movement. Means to augment physical function and expand the qualitative range of the mover are explored.

330A Pilates Reformer Training (1)
Designed to condition students using resistance training in the Universal Reformer and other Pilates apparatus. Students learn exercise principles and techniques on specialized equipment, focusing on correction of body alignment problems, muscle imbalances, strength, and flexibility.

330B Bartenevov Fundamentals (1)
Exploration and practice in a system of movement training designed to improve the functional and expressive aspects of movement.

330C Pilates Mat Training (1)
Involves laboratory practice of 45 mat exercises that train the muscles to improve body stability and mobility. The Pilates method develops precision coordination and expression of movement while increasing strength and flexibility. Addresses injury rehabilitation from the perspective of preventive training.

331 Analysis of Dance Movement (4)
Prereq: 231. Explores skeletal alignment and deviation, muscular development and function, and mechanical efficiency in production of dance movement. Basic to course study is thorough understanding of principles of stability and motion as they relate to dance.

332 Fitness for the Whole Mover (2)
Introduces the basics of fitness in practice and theory. Strength, flexibility, aerobic conditioning, and relaxation as a part of the fitness continuum are explored through a variety of approaches to creating and attaining fitness goals.

333 Pilates Teaching Practicum (2)
This course is designed to provide supervised teaching experience and practice for students preparing to enter the Pilates Teacher Certification Program. Students will conduct practice teaching on all Pilates apparatus, learning body alignment, exercise prescription and progress assessment techniques.

351 Dance Cultures of the World I (4) (2C)
Introduction of dances from the world (excluding Western art dance). Function of dance in society and its relationship to other arts.

352 Dance Cultures of the World II (4) (2C)
Same as 351.

353 Dance Cultures of the World III (4) (2C)
Same as 351.

370 Viewing 20th Century Dance (4)
Prereq: open to students who have had 170-jr and above. Art of dance from broad point of view, involving dance viewing, literature, and participation. Deals with aesthetic, psychological, social, and cultural aspects.

380 Practicum in Dance Production (1)
Prereq: perm. Students will practice in production and/or performance. May be repeated.

385 Dance Repertory (3, max 12)
Prereq: majors only, audition, and perm. Rehearsal and performance, in which choreographic works are created by choreographer or reconstructors with aid of video tape, film, and/or dance scores.

401A Modern Dance Technique IV (3)
Prereq: 303A or perm. Required. Employment of technical skill to address the more subtle demands of performance focus, projection, expressivity, and dynamic range.

401B Ballet Technique IV (2)
Prereq: 303B or perm. Required. Employment of technical skill and performance demands within the classical ballet tradition.

402A Modern Dance Technique IV (3)
Prereq: 401A or perm. Required. Continuation of 401A.

402B Ballet Technique IV (2)
Prereq: 401B or perm. Required. Continuation of 401B.

403A Modern Dance Technique IV (3)
Prereq: 402A or perm. Required. Further development of 402A.

403B Ballet Technique IV (2)
Prereq: 402B or perm. Required. Further development of 402B.

404D Jazz Dance Technique IV
Advanced development of refined jazz dance skills that address the demands of preprofessional performance.

411 Dance Notation II (3)
Prereq: 313 or perm. Continuation of 313 with more advanced reading and writing in notation.

420 Dance Technique IV (2)
Prereq: 320. (A) modern dance, (B) ballet, (C) jazz.

431 Dance Kinesiology Seminar (2)
Prereq: 331. Assists student to construct anatomical- ly sound and functionally effective dance class.

440 Practicum in Teaching Dance II (1–2)
Prereq: 240 and perm. Student teaching under supervision.

441 Teaching Dance I (3)

442 Teaching Dance II (2)
Prereq: at least 1 qtr of 240, coreq with 440. Principles of teaching dance and their practical application. Dance for adults.

460 Senior Seminar (2)
Prepares students for the field of dance and related careers. Skills in writing, research, and oral presentation, as well as the ability to access available resources, are refined.

471 History of Dance I (4) (2H)
Development of Euro-American dance in the 20th century with focus on contemporary dance through the present.

472 History of Dance II (4) (2H)
Global dance forms: Study of dances in historical and cultural contexts, their functions in society and relationships to contemporary artistic expressions. Focus on topics from traditional and recent research in world dance.

473 History of Dance III (4) (2H)
Development of Euro-American dance from classic times through 20th-century ballet, with emphasis on Baroque, Romantic, and Diaghilev periods.

474 History of Postmodern Choreography and Practice
This course explores postmodern dance (1960-present) from theoretical and practical perspectives. Theoretical and historical readings from dance studies, performance studies, and cultural studies on postmodern dance will combine with the application and investigation of choreographic theories in the dance studio. As the dancing draws on an everyday or pedestrian movement vocabulary, no movement experience is necessary. This course will cover artists such as Yvonne Rainer, Trisha Brown, David Gordon, and Bill T. Jones. The postmodern aesthetic is interdisciplinary in nature: choreographers frequently collaborate with artists from other disciplines, such as music, visual arts, and theatre. This course is appropriate for students interested in intellectual and experiential artistic practices.

480 Production Problems for Dance Theatre (3–6, max 6)
Prereq: perm. Includes choreography, performance, and production aspects of senior projects and other dance events.

488 Dance Choreography and Video Techniques (2)
Prereq: perm. Designed to increase awareness of the possibilities of video in dance, both as a recording tool and a creative tool. The basics of video production and digital editing will be introduced in order for dance choreographers to become familiar with video technology applicable to dance.

490 Independent Study (1–10)
Prereq: perm.

494 Internship (1–16)
Prereq: perm. Provides credit for internship experience in which some dance major may participate. Internship allows individual to gain actual experience in field of dance and related areas, e.g., apprenticeship, technical production, arts administration.
Courses / Economics

259

495 Special Topics in Dance (1-4)
Special topics relating to the choreography, technique, production elements, or aesthetics of historical or contemporary dance forms.

Deaf Studies and Interpreting (DSI)
The following courses for the proposed A.A.S. in deaf studies and interpreting are available only on the Chico campus:

111 Sign Language and Deaf Culture I (4)
Prereq: 111. Continuation from 111 of deaf languages and culture. Includes more than 300 additional signs, using ASL, PIDGIN, and SEE, reverse interpreting paragraphs, and studying idioms and slang terms.

112 Sign Language and Deaf Culture II
Prereq: 111. Continuation from 111 of deaf languages and culture. Includes additional signs, continuing to use ASL, PIDGIN, and SEE, further reverse interpreting paragraphs, and translating idiom and slang paragraphs. Discusses deaf in mental institutions, patients and court system. Students interpret for University functions and programs.

120 Introduction to Deaf Studies and Interpreting (1)
First of three assessments in deaf studies and interpreting degree program, evaluating knowledge of various sign languages used, types of deaf people using each of the sign languages, cultural aspects of deafness, speed in signing, comprehension speed, and interpreting and reverse interpreting skills. Offers basic introduction to knowledge and skills required for successful completion of the degree. Covers history of interpreting, career opportunities, ethical considerations, and includes discussion of program courses, seminar paper, and second and third assessments.

161 Orientation to Deafness (3)
Broad overview of field of deafness, focusing on education perspectives, psychosocial precepts, communication modes, vocational opportunities, support services and recent technological advances. Benefits parents, educators, vocational rehabilitation counselors, interpreters, and other professionals who come into contact with the deaf and hearing impaired community.

191 Interpreting as a Profession (1)
Prereq: 120. Second of three assessments in deaf studies and interpreting degree program, requiring 50-60 percent improvement from 120 in speed in signing, knowledge of culture, and interpreting and reverse interpreting skills. Includes introduction to practicums, professionalism of interpreting (dress, demeanor, professional organizations), national certification, and ethics of the profession and their impact on personal views.

211 Sign Language and Deaf Culture IV (4)
Prereq: 113. Additional signs and advanced usage of previous signs from first-year sequence. Includes interpreting for University functions, community meetings, and business situations.

212 Sign Language and Deaf Culture V (4)
Prereq: 211. Signs beyond 211 and a larger role in interpreting situations. Additional cultural information (family relationships, sexual relationships, and more) enhances abilities to work with and for the deaf in any context.

213 Sign Language and Deaf Culture VI (4)
Prereq: 212. Signs beyond 212 and specific interpreting within community. Includes cultural information such as family dynamics, time orientation within mental health situations, and ethics for interpreting. Covers sexual signs, regional signs, and idioms specific to area.

221 Practicum I (2)
Prereq: advanced standing, perm. Opportunity to work in teaching, training, and interpreting situations under supervision. Provides experience in program development and deals with professionalism in interpreting. May include student-teaching sign language classes within community and businesses, observation of professional interpreting, and critiques of videotaped interpreting situations.

222 Medical Personnel and the Deaf (4)
For those in the emergency care field or studying to be an interpreter. Covers 150 essential signs for immediate communication, different types of deaf, different sign languages, working with deaf family members, legal issues for hospitals and nursing homes, sexual signs involved in rape cases and abuse, cultural issues working with male/female deaf, and more.

224 Interpreters and Interpreting (3)
World of interpreting training, and the deaf, including detailed code of ethics and responsibilities imposed on those who interpret in all fields: platform interpreting, educational interpreting, medical interpreting, religious interpreting, etc. Discusses interpreter role in the courtroom, including the interpreter oath and its significance to the court, the interpreter, and the deaf.

226 Practicum II (2)
Prereq: advanced standing, 221. Opportunity to interpret for the deaf without immediate supervision, extending knowledge of interpreting in specific contexts. Ability to work within community is enhanced through responsibility for teaching basic sign language classes and through critiques of videotaped interpreting situations.

260 Critical and Traumatic Situations (3)
Sexual abuse of deaf children, including causes, incident rate, interviewing techniques, investigation problems, and involvement of law enforcement agencies, schools, hospitals, DARE, and crime prevention programs. Also discusses deaf in disaster situations, emergency response centers, first responders, and problems of victimization of deaf in research projects.

286 Study of Deaf Culture (3)
Sociocultural aspects of deafness, addressing issues of deaf communities such as leadership roles, political activity, and organization. Examines the functioning of deaf within social institutions.

288 Seminar in Deaf Studies (2)
Prereq: advanced standing, perm. Scholarly paper of no less than 50 pages is required for completion of the associate's degree in deaf studies and interpreting. Involves choosing research topic related to field of work, engaging in library research, interviews, questionnaires, and other forms of inquiry.

291 The Professional Interpreter (1)
Prereq: 191. Third and final assessment in deaf studies and interpreting degree program, serving as a capstone. Requires 45%-50% improvement from 191 and the ability to interpret effectively in any situation for any of the three types of deaf. Covers introduction to Web sites regarding deaf, resume preparation for job interviews (including role plays), discussion and evaluation of past and current assessments, and in-depth review of ethics of interpreting and the Americans with Disabilities Act.

298A-E Special Topics (1-4, max 12)
Opportunity to explore topics related to deaf studies either on an individual basis or in a structured course.

Economy
See Biological Sciences or Environmental and Plant Biology.

Economics (ECON)

103 Principles of Microeconomics (4) (2S)
Prereq: MATH 101 or higher math placement. Basic theory and economic analysis of prices, markets, production, wages, interest, rent, and profits. Analysis of how the capitalistic system determines what, how, and for whom to produce.

104 Principles of Macroeconomics (4) (2S)
Prereq: MATH 101 or higher math placement. Basic theory and economic analysis of prices, markets, production, wages, interest, rent, and profits. Analysis of how the capitalistic system determines what, how, and for whom to produce.

105 Principles of Microeconomics II (4)
Prereq: 103 and 104. Application of economic theory to current economic problems with emphasis on public policy implications.

300 Mathematics for Economists (4)
Prereq: 103 and 104 and perm. Mathematical analysis of economic problems. Calculus techniques used prominently in economics literature, together with their application to selected problems in economics.

303 Microeconomics (4)
Prereq: 103 and 104. Price system as allocative mechanism. Price and production policies of individual firms and consumers under alternative market conditions and analysis of the efficiency of allocation, on social efficiency of resource allocation. Students expected to have understanding of elementary algebra and geometry.

304 Macroeconomics (4)
Prereq: 104, Jr; soph if major. Factors determining level of nation's economic activity and responsible for growth and stability in nation's economy. Part of course devoted to measurement of national income while remainder consists of analysis of interrelationships among production, price levels, relative prices, employment, and capital formation. Students expected to have understanding of elementary algebra and geometry.

305 Managerial Economics (4)
Prereq: 103, QBA 201, and MATH 163A. Analysis of decision making in enterprise; market environment; measurement of influence of policy and nonpolicy variables on sales and costs, sales, cost, and profit forecasting; empirical studies of market structure and pricing; includes regression analysis.

307 History of Economic Thought (4)
Prereq: 103 and 104. Evolution of major economic doctrines: mercantilists, physiocritics, Adam Smith and classical school. May also cover historical school, Austrian school, Alfred Marshall and neoclassics.

312 Economics of Poverty (4)

313 Economics of the Environment (4)
Prereq: 103 and 104. Economic analysis of such environmental matters as air, water, and noise pollution, population growth, and land use. Emphasis placed on use of economic theory and empirical research in evaluating environmental policies.

314 Natural Resource Economics (4)
Prereq: 103, MATH 163A. Explores the economic aspects involved in the extraction and utilization of both renewable and nonrenewable natural resources. Topics include the economics of oil and mineral extraction, groundwater use, agricultural practices, forestry, and fisheries. It also examines the allocation of property rights and economic benefits and costs of natural resource use.

315 Economics of Health Care (4)
Prereq: 103 and 104. Demand for medical care, supply behavior of profit and nonprofit agencies, market structure, adverse selection, public and private health insurance.

316 Economics and the Law (4)
Prereq: JUS or JUR or perm. Major topics are property, contracts, and torts. Class time is divided between economic analysis of these topics in the abstract and actual legal cases that involve these topics.
Courses / Economics

320 Labor Economics (4)
Prereq: 103. Demand for labor, supply of labor, household production, compensating wage differentials, education and training, discrimination, unions, and unemployment.

322 Economics of Human Resources (4)
Prereq: 103. Investigation of the decisions individuals and families make regarding education, marriage, fertility, labor supply, and child care as well as the effects of public policy on these decisions.

332 Industrial Organization (4)
Prereq: 302 or 305. Market structures, market conduct, and social performance of industries. Emphasis upon firms’ strategic behavior in price and nonprice competition. Topics include oligopolistic pricing, strategic entry deterrence, location strategies, product quality, advertising, and research and development. Economic welfare implications of firms’ behavior examined.

334 Economics of Antitrust Law (4)
Prereq: 303 or 305. Explores the economic behavior of the firm subject to antitrust laws. Topics include collusion, price discrimination, vertical restraints, and other behavior where the intent may be to monopolize a market. Also examines institutional incentives and economic benefits and costs of antitrust laws.

335 Economics of Energy (4)
Prereq: 103. Applies economic theory to analyzing public policy issues regarding energy production and use—including such topics as price controls, import dependency, conservation, supply outlook, and industry concentration.

337 Government Regulation of Business (4)
Prereq: 303 or 305 or perm. Why does the government regulate business? Reasons include the prevention of market power, considerations of fairness, excessive competition, natural monopoly, externalities, and reducing transactions costs.

340 International Trade (4)
Prereq: 103. International trade patterns, theories of absolute and comparative advantage, classical and modern trade theory, tariffs, quotas, non-tariff barriers, preferential trading arrangements.

341 International Monetary Systems (4)
Prereq: 104. How exchange rates are determined, fixed vs. flexible rates, government intervention, fiscal and monetary policy in open economy, transmission of inflation and unemployment among nations, international capital movements, covered interest arbitrage, forward exchange, Eurocurrency markets.

342 International Economic Policy (4)
Prereq: 340 or 340. Current economic developments of foreign and U.S. economic policy. Commer- cial policy and tariff policy; exchange rate instability, balance of payments problems including LDC debt situation; international liquidity issues; trade relations among industrial, underdeveloped, and Soviet-bloc countries; multinational corporations; roles of institutions such as World Bank, International Monetary Fund, and GATT.

343 Financial Economics (4)
Prereq: 360 or 304, 355 or 303; MATH 163A or MATH 263A. In a free economy, income earners’ savings flow directly and through intermediaries to investors who use the proceeds to increase capital, the engine of growth. Intermediaries such as banks, brokers, exchanges, create instruments such as equities, bonds, mutual fund shares, and their derivatives, which trade in secondary markets. This course examines the interrelationships between institutions, instruments, participants, strategies, and markets.

350 Economic Development (4)
Prereq: 103 and 104. Nature of, obstacles to, and future possibilities for economic growth of nations. Special emphasis given to problems of underdevel- oped countries. Studies of selected countries.

351 Agricultural Development (4)
Prereq: 103 and 104. Patterns of agricultural development: technological and demographic changes in agriculture; socioeconomic problems; marketing arrangements; case studies of specific agricultural development projects.

352 Economic History of the United States (4)
Prereq: 103 and 104. Economic factors in develop- ment of U.S., including historical growth of economic institutions such as banking, manufactur- ing, labor unions, and agriculture, from colonial times to present.

353 European Economic History (4)
Prereq: 103 and 104. Economic growth of devel- oped countries. Focus on industrial revolutions in Great Britain, France, Germany, and the former Soviet Union. Implications of these countries related to various theories of economic change.

360 Money and Banking (4)
Prereq: 104 and 305. Banking system in determination of national income and output. Monetary theory and policy emphasized.

370 Comparative Economic Systems (4)
Prereq: 103 and 104. Theoretical and institutional characteristics of capitalism and socialism with specific emphasis on prevailing economic systems in U.S., Great Britain, and the former Soviet Union.

381 Introduction to Economic Statistics and Econometrics (4)
Prereq: 103 and 104. Statistical methods are devel- oped within an economic context. Fundamental statistical topics include descriptive statistics, basic probability theory, random variables, sampling, estimation, and hypothesis testing.

382 Economic and Financial Analysis with Statistical Packages (4)
Prereq: 104 and either 381 or QBA 201, PSY 221, POLS 482, or MATH 250/251. SAS language, using real life small and large data sets and applying SAS procedures to conduct statistical and financial analysis of economic and business data. Interpretation of statistical output of estimated functions and written reports for rational decision making using business and economic analysis.

385 An Introduction to Economic Methodology and Research (4)
Prereq: 303 or 381, or equiv. Methods used by economists in investigation of economic problems. First part introduces research methods, including contemporary statistical estimation techniques. Second part applies these techniques to investigation of economic phenomena. Types of application include construction and testing of simple econometric model, estimation of pro- duction functions, evaluating theories of factor pricing, estimating social costs of pollution, etc.

406 Monetary Theory and Policy (4)
Prereq: 303 or 305 and 305. Emphasis on monetary economics. Money demand and supply theory and policies for minimizing cyclical fluctuations in economic activity.

425 Public Policy Economics (4)
Prereq: 104. Survey of economic approach to analyzing public policy issues. Uses concepts of welfare economics, public choice economics, and cost-benefit analysis, as applied to sample of policy subjects.

430 Public Finance (4)
Prereq: 303 or 305 or perm. Role played by government as user of economic resources and redistributor of incomes. Some questions explored: need for government’s entry into economy, optimal size of government, selection of tax and expenditures weights, and effects of government economic activity on private sector.

431 Economics of Transportation (4)
Prereq: 303 or 305. Economics of transportation; regulations of transport and national transport policy.

444 Futures Markets (4)
Prereq: 360 or FIN 327 or perm. Contracts, trading, institutions, and strategies, including hedging and speculation. No credit if FIN 444 taken.

455 African Economic Development (4)
Prereq: 350 or perm. Economic characteristics, development problems, strategies, and prospects of countries of Africa.

474 Economics of Latin America (4)
Prereq: 350 or perm. Economics of Latin American countries, prospects for economic development of the region, natural and institutional obstacles to economic change. Economic heritage of colonial period and subsequent evolution of economic institutions, resources of the area and utiliza- tion, and trends in economic activity and policy in post-WWII period.

482 Topics in Econometrics (4)
Prereq: 303 or 381, MATH 163A or calculus, or perm. Basic linear regression models are explored within an econometric context. Simple and multiple linear regression models are intro- duced under classical assumptions and developed in relation to heteroskedasticity, autocorrelation, multicollinearity, and specification error. Models with binary regressors, models with qualitative dependent variables, and the simultaneous equations model are introduced. Computer assignments provide experience in empirical social science research.

491 Seminar (3–5)
Prereq: perm. Selected topics of current interest in economics.

493X Readings (1–15)
Prereq: perm. Readings in selected fields of econom- ics. Topics selected by student in consultation with faculty member.

495 Research (3-5)
Methodology, analysis of data, and preparation of research findings.

497 Independent Research (1–15)
Prereq: perm. Research in selected fields of econom- ics under direction of faculty member.

Education

All programs and courses in the College of Edu- cation satisfy the standards of the Ohio State Department of Education and NCAE. Consult your advisor regarding program requirements and scheduling. In particular, note that some pairs or groups of professional education courses must be taken concurrently. Address questions to Student Services, McCracken Hall 124.

Each course in education may be taken no more than twice.

Counselor Education (EDCE)

201 Career and Life Planning Seminar (3)
Designed to provide knowledge and skill in career and life planning for fr and schs, especially for those who are undecided about college major or career. Emphasis on career development, clarifying values, exploring career options, and developing decision-making skills. Special section for Adult Learning Services students only; designed to provide knowledge and skill in career and life planning especially for adult considering job or career change. Emphasis on identifying skills, interests, experience, and values in relationship to new career choices and options.

400 Special Topics in Guidance, Counseling, and Student Personnel (1-5)
Prereq: perm. Independent studies, specialized projects, and seminars on following special topics: alcohol and substance abuse, self-control, and management of stress; marriage and family issues; assertiveness; human sexuality; and Adlerian theory, method, and research (may be repeated for max of 18 hrs).

410 Human Relations (3)
Prereq: Jr. Study and practice of developing healthy and mutually satisfying interpersonal relationships. Lecture and discussion groups focus on dynamics of human relationships, factors fostering effective interaction, and significance of self-concepts in human communication. Topical headings include value clarification, games people play, self dis- closure and trust, conflict, prejudice, death and dying, multicultural education, sexism, constructive use of anger, etc.
420 Guidance Practices in Elementary Schools (4)
Need, scope, and nature of elementary guidance surveyed. Guidance approaches and procedures examined for their usefulness in working with children and parents. Roles of school counselor and other pupil personnel specialist reviewed for their contribution to growth and development of children. Opportunity for students to achieve self-understanding through involvement in self-appraisal.

430 Guidance in American Secondary Schools (4)
Same as 420 but pertains to secondary schools.

440 Foundations in Group Dynamics (4)
General principles and basic techniques of group dynamics. Interaction in human relations situations that occur in agency settings, business, classroom, community, recreation, or various types of professionally led training, counseling, and growth groups. Through both cognitive and affective experience, students learn to understand and use group dynamics principles in areas of personal and professional interaction. Students attend weekly cognitive seminars as well as participate in ongoing group lab.

Curriculum and Instruction (EDTE) 100 (1)
An introduction to teaching as a profession.

101 Democracy and Education (4)
Prereq: admission to CARE program. Coreq: 101L. An introduction to the unique role American public schools play in preparing citizens for democracy. Particular attention will be paid to the role of the teacher in the pre-service process, as well as to historical and sociological precedents.

101L Democracy and Education: Field Experience (2)
Prereq: admission to CARE program. Coreq: 101. Field experience to complement EDG 101 Democracy and Education. Will involve several school placements at differing classroom levels to promote comparison and analysis.

200 Learning, Human Growth, and Development (6)
Prereq: Admission to Professional Education. Coreq: 201, 202. Provides a general knowledge about human learning as it relates to the life cycle from birth to young adulthood. Designed to provide prospective teachers with a fundamental knowledge of human growth and development (physical, social, affective, and cognitive) and theories of learning.

201 Characteristics of Learners with Exceptionalities (3)
Prereq: Admission to Professional Education. Coreq: 200, 202. Covers a range of topics in the special education field, including identification, referral, assessment procedures, service delivery options, parental involvement, the law and legal issues, supports for inclusion, roles of agency and related service personnel, and characteristics of all types of learners with exceptionalities, including gifted, from preschool through young adulthood. No credit for both 201 and EDSP 271.

201ABC Childhood in America (4)
Prereq: 101. Introduces students to children and their characteristics at various levels of development. Students are also introduced to and encouraged to examine factors that influence children’s learning in family, community, neighborhood, race, culture, gender, and socioeconomic status. Students examine values and beliefs systems of themselves and children, as well as identify elements of successful parenting.

202 Field Experience in Education (2)
Prereq: Admission to Professional Education. Coreq: 202. Employs the characteristics of typical childhood development, learned in 200, and exceptional development of children and youth, learned in 201, as they observe, assist, adapt tests and lessons, and tutor a diverse range of pupils in a field setting.

210 Introduction to Teaching in a Democratic Classroom (4)
Prereq: 101. Coreq: 201L. The purpose of this course is to identify the characteristics of a democratic classroom and to develop student skill in the creation of a democratic learning environment. Students examine a variety of teaching models including explicit teaching and cooperative learning, and begin to develop competence in their use.

210L Introduction to Teaching in a Democratic Classroom Field Experience (2)
Prereq: 101, admission to 210. This practicum accompanies EDTE 210 and provides students with field experience in the classroom. Classroom assignments include observations of children, as well as lecture, tutoring, small-group instruction, and other appropriate preservice experiences.

220 Phonics and the Structure of Language (3)
Prereq: admission to Professional Education. Course provides information and training in the foundations of phonics instruction. It explores the historical, linguistic, and instructional framework related to phonics skill development.

310 Advanced Methods for the Democratic Classroom (4)
Prereq: admission to CARE program and 210. Coreq: 310L. In-depth exploration of several teaching methods utilized in progressive, democratic classroom. Focus on introduction to these methods in EDTE 210.

310L Advanced Methods for the Democratic Classroom Lab (2)
Prereq: admission to CARE program. Coreq: 310. Field experience utilizing methods gained in EDTE 310.

325 Literature-Centered Developmental Reading Instruction (5)
Prereq: 220, and nine additional credits preparation for teaching of developmental reading in the middle school. The course emphasizes a literature-centered approach to the teaching of reading and emphasizes the development of proficient reading through a stage model of reading. Text and supplementary readings, lecture, demonstration, discussion, multimedia resources, observations and participation in schools, and projects for practical competence and integration in class procedures.

331J Educational Research: Techniques and Writing (4) (1J)
Prereq: Jr. Concentration upon communication skills of reading, writing, and speaking, utilizing educational writings dealing with history of education, philosophy, psychology, sociology, and current issues. Development of personal reading, effective writing, and speaking skills.

371A Instructional Adaptations for Learners with Exceptionalities and Diverse Needs—Middle (4)
Prereq 200, 201, 202. Designed to develop skills needed by educators at the elementary and middle levels to work with learners with exceptionalities and diverse needs. Content includes curriculum modifications, instructional and management adaptations, effective collaboration strategies, accessing related and support services, and skills required for instructing in and managing an inclusive classroom.

371B Instructional Adaptations for Learners with Exceptionalities and Diverse Needs—Secondary (4)
Prereq: admission to 210. This course and clinical field experiences are designed to develop skills needed by educators at the adolescent to young adult level in order to work with learners who have exceptionalities and diverse needs in inclusive classrooms. Content includes curriculum modifications, selection and appropriate uses of reading materials, instructional and reading adaptations, classroom management adaptations, effective collaboration strategies, accessing related and support services, and skills required for instructing and managing an inclusive classroom.

371C Instructional Adaptations for Learners with Exceptionalities and Diverse Needs—Early (4)
Prereq: Professional Education and EDSP 271. Designed to develop skills needed by early childhood educators to work with families and learners who have exceptionalities and diverse needs in inclusive classrooms. Content includes curriculum modification, instructional and management adaptations, effective collaboration strategies, accessing related and support services, and skills required for instructing and managing an inclusive classroom.

420 Teaching Reading in the Content Area (4)
Prereq: adv. standing. Materials, methods, and techniques for teaching adolescent learners of various abilities. Emphasis on diagnosis of reading difficulties and adaptation of materials and teaching methods for content area instruction. Lab included as part of the lecture class, tutoring, small-group instruction, and other appropriate preservice experiences.

421 Foundations of Reading Instruction, Diagnosis, and Remediation for Classroom Teachers (4)
Prereq: admission to 210. Designed to provide classroom teachers a theoretical and practical understanding of the foundations of reading instruction, diagnosis, and remediation. An exploration of these foundations as they affect a wide diversity of students. Includes practical hands-on opportunities for evaluating, assessing, and remediating one student’s reading ability.

422 Diagnosis and Treatment of Reading Disabilities (4)

423 Reading Laboratory Practicum (4, max 12)

492K Workshop in Curriculum and Instruction Development (4)
Prereq: perm. Staff. Designed to provide practicing teachers and other instructional personnel with in-service education directed toward their identified needs. Facilitates offering of short courses, work-shops, and summer institutes. Areas of concentration currently available: (A) Language Arts, (B) Social Studies, (C) Science, (D) Mathematics, (E) Reading, (F) Kindergarten, (G) Individualization Instruction, (H) Team Teaching, (I) Interaction Analysis, (J) Developing Behavioral Objectives, (K) Curriculum Development, (L) Interdisciplinary Topics, (M) Special Topics, (N) Special Education Topics, (O) Supervision of Instruction, (P) Education for Gifted.

492X Workshop in Curriculum and Instruction Development (5–15)
Prereq: 101, 210, 492X. An in-depth examination and synthesis of information learned in both the special CARE classes and in general education classes with emphasis on how this information can be used in the classroom and integrated into the future teacher’s teaching strategies.

Education Cultural Studies (EDCS) 301 Education and Cultural Diversity (3)
Prereq: Admission to Professional Education. Requires students to observe, analyze, and reflect upon the advantages and problems associated with teaching in a multicultural context. Students study the influences of cultural diversity on education in the United States and develop the skills and attitudes that future classroom curriculum instruction and cultural diversity groups.

400 School, Society, and the Professional Educator (3)
Studies the social, philosophical, ideological, and historical foundations of K-12 education in the
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEC 206</td>
<td>Introduction to the Integrated Curriculum (4)</td>
<td></td>
</tr>
<tr>
<td>EDEC 301</td>
<td>Teaching Science for Young Children (3)</td>
<td>Coreq: 201. Designed for undergraduate students seeking licensure in early childhood. Focuses on the development of reading and the role of literature in that process.</td>
</tr>
<tr>
<td>EDMC 330L</td>
<td>Teaching Mathematics in Middle Childhood (Lab) (2)</td>
<td>Coreq: 320L. Emphasizes the development of reading and literacy from a global view of language, thinking, and learning. Emphasis is given to methods and materials with an emphasis on the use of literacy within the framework of age and individual appropriateness.</td>
</tr>
<tr>
<td>EDCI 220</td>
<td>Educational Media (EDM)</td>
<td>Prereq: 330L. Familiarizes preservice educators with the mathematics curriculum of grades 4-9 and with instructional techniques appropriate for the delivery of the curriculum. The course provides a solid foundation in teaching and learning applied to mathematics, complemented by rich experiences in working with students in actual school settings. Designed to extend preservice teachers' understanding of content and methodology so that mathematics instruction is seen in terms of active students making appropriate use of technology in learning math as a relevant and coherent body of knowledge, which relates to diverse cultures. The course is designed to be taken concurrently with middle childhood lab course.</td>
</tr>
<tr>
<td>EDCI 301</td>
<td>Teaching Mathematics in Middle Childhood GradesField (1)</td>
<td>Coreq: 330L. Application of concepts and skills from EDEC 330. Students observe and teach mathematics lessons in appropriate settings under the supervision of the course instructor. Students demonstrate proficiency in the use of mathematical models and manipulative teaching aids.</td>
</tr>
<tr>
<td>EDCI 340L</td>
<td>Teaching Science for Young Children—Lab (1)</td>
<td>Coreq: 340L. Will apply material learned in 340 in lab setting.</td>
</tr>
<tr>
<td>EDCI 350L</td>
<td>Teaching Social Studies in Early Childhood (3)</td>
<td>Coreq: 350L. The foundation of social studies is to help students gain new understandings of the world through discourse and activities which emphasize applications to authentic issues and problems of human society. Problem solving, critical thinking, analysis, negotiation and collaboration are part of the teaching of social studies.</td>
</tr>
<tr>
<td>EDAD 425</td>
<td>Emergent Reading and Literacy (4)</td>
<td>Prereq: EDCI 220. Emphasizes the development of reading and literacy from a global view of language, thinking, and learning. Emphasis is given to methods and materials with an emphasis on the use of literacy within the framework of age and individual appropriateness.</td>
</tr>
<tr>
<td>EDAD 420</td>
<td>Comparative Cultures and Educational (4)</td>
<td>Prereq: perm. Emphasis on distinctive cultural, economic, and political forces which shape patterns, problems, and roles of education in some selected developed and developing nations. These include U.S., some European countries, and at least one African and Asian nation where former or present Western culture has impact. Assessment of this impact especially on educational developments.</td>
</tr>
<tr>
<td>EDMC 350</td>
<td>Teaching Social Studies</td>
<td>Prereq: 300 or 301. Coreq: 350L. The foundation of social studies is to help students gain new understandings of the world through discourse and activities which emphasize applications to authentic issues and problems of human society. Problem solving, critical thinking, analysis, negotiation and collaboration are part of the teaching of social studies.</td>
</tr>
<tr>
<td>EDMC 425B</td>
<td>Education and Development in Asia (4)</td>
<td>Prereq: perm. Similar emphasis as 425A on tradition and change in society, culture, and education, and role of education in national development and international understanding; discussion of pertinent educational issues and problems.</td>
</tr>
<tr>
<td>EDMC 425C</td>
<td>Education and Development in Latin America (4)</td>
<td>Prereq: perm. Same emphasis as 425A-425B on tradition and change in society, culture, and education, and role of education in national development and international understanding; discussion of pertinent educational issues and problems.</td>
</tr>
<tr>
<td>EDMC 350A</td>
<td>Middle Childhood Instructional Process and Curriculum (4)</td>
<td>Prereq: admission to adv standing. Futhers understanding of the middle child and the middle school. Lecture, activities, and field experiences revolve around developmentally appropriate teaching, context based assessment, supportive learning theory and application, and structure of the middle school.</td>
</tr>
<tr>
<td>EDMC 350B</td>
<td>Middle Childhood Education and Curriculum Grades (Lab) (1)</td>
<td>Coreq: EDMC 310. Lab experience accompanying 350.</td>
</tr>
<tr>
<td>EDMC 350C</td>
<td>Children's Literature for Middle Childhood (4)</td>
<td>Prereq: admission to adv standing. This course treats the body of literature by genre, appropriate for children from eight to fourteen years. It includes various techniques for utilizing children's literature in school settings.</td>
</tr>
<tr>
<td>EDMC 350D</td>
<td>Teaching Mathematics in Middle Childhood Grades (4)</td>
<td>Prereq: 300 or 301. Coreq: 350L. Provides basic information in language development, oral and written language, and language mechanics. Provides strategies for teaching the language modules through an integrated approach. Stress assessment in authentic settings.</td>
</tr>
<tr>
<td>EDMC 350E</td>
<td>Teaching Language Arts in the Middle Childhood Grades (Lab) (1)</td>
<td>Coreq: EDMC 310. Lab experience accompanying 350.</td>
</tr>
<tr>
<td>EDMC 350F</td>
<td>Teaching Language Arts for Middle Childhood (4)</td>
<td>Prereq: admission to adv standing. This course treats the body of literature by genre, appropriate for children from eight to fourteen years. It includes various techniques for utilizing children's literature in school settings.</td>
</tr>
<tr>
<td>EDMC 350G</td>
<td>Teaching Mathematics in Middle Childhood Grades (4)</td>
<td>Prereq: 300 or 301; 22 hrs in science. Coreq: 340L. Emphasis on concepts and skills from EDEC 330. Observe and teach mathematics lessons in appropriate settings under the supervision of the course instructor. Demonstration of proficiency in the use of mathematical models and manipulative teaching aids.</td>
</tr>
<tr>
<td>EDMC 350H</td>
<td>Teaching Middle-Level Science (4)</td>
<td>Prereq: 300 or 311. Coreq: 340L. Emphasis on concepts and skills from EDEC 330. Observe and teach mathematics lessons in appropriate settings under the supervision of the course instructor. Demonstration of proficiency in the use of mathematical models and manipulative teaching aids.</td>
</tr>
</tbody>
</table>
| EDMC 350I   | Teaching Middle-Level Social Studies (4)                                     | Prereq: 300 or 301. Coreq: 350L. The foundation of social studies is to help students develop new understandings of the new world through
Courses / Education

discourse and activities that emphasize applications to authentic issues of human society. Problem solving, critical thinking and analysis, negotiation and collaboration are part of the teaching of social studies content. Using national and state standards, course emphasizes integrated social studies for curriculum organization in grades 4-9.

350L Teaching Social Studies in Middle Childhood-Lab (1) Prereq: 300 or 301. Coreq: 350. Field experience in 4th-9th grade classrooms will apply the theory and applications learned in 350 throughout the quarter.

490 Independent Study (1–5) Prereq: adm to EDM Programs. Jr. Independent study provides the student an opportunity to focus on an area of interest, concern, problem, research, and/or advanced study in a particular field under staff guidance. Suggested readings and other resources depend on need and interest of the individual, frequent conferences, preparation of final report.

Professional Laboratory Experience (EDPL)

360 Field Experience in Elementary or Secondary Schools (2) Prereq: j. perm. Observation and participation in elementary and secondary schools. Prior approval must be secured from Field Experience Office in May for those planning experiences in August-September period and in November for those planning participation in December. May be repeated.

361 Field Service in Education (2) Prereq: soph. Participation in community agencies, summer camps, recreation programs, Head Start, and various school-related programs. Arrangements must be made in Field Experiences Office prior to participation.

458 Student Teaching in Early Childhood (7) Assigned in Middle childhood. For teaching under supervision of master teacher in classroom in preschool through third grade for one quarter, full-time. Concurrent enrollment for EDPL 458, 459, and 465 is required of all majors in secondary academic areas, home economics, communication, and physical education. Concurrent registration in 461, 463, and 465 is required of majors in arts, music, and physical education.

462 Student Teaching in Middle Childhood (6) Prereq: 461. Continuation of 461. See 461 for description.


465 Student Teaching Seminar (3) Analysis and interpretation of student teaching experience. Problem-centered discussion of major and concern-related to classroom teaching. Structured discussion of unit and lesson planning, evaluation, classroom management, pupil adjustment, and test of recent legislation upon classroom teacher, position procurement, professional ethics, and professional organizations. Concurrent enrollment of 463 and 1/2 quarter hours credit in student teaching required.

466 Student Teaching for Advanced Students (6–9, max 9) Prereq: perm. Supervised observation, participation, and limited teaching; open only to elementary education degree candidates and selected secondary education and special education with a minimum of three years of prior teaching experience.

Secondary Education (EDSE)


350 Secondary School Planning and Concentration Practice (5) Prereq: adv. standing. Designed to enable preservice educators to design, implement, evaluate, and refine the processes of secondary school teaching and learning. Course focuses on systematic planning, methods of direct instruction, and effective classroom interaction. Course is specifically designed around the four domains of Praxis III with particular focus placed upon domain A—organizing content—and domain B—creating a learning environment—with emphasis on content area reading skills applied to textbook analysis and readability. Analyses used for planning appropriate instruction. Course includes clinical and field experiences in secondary schools.

351 Secondary School Teaching and Learning (5) Prereq: EDSE 350 and EDSE 371B. Extends upon the content of 350. Using the Ohio model curricula, the course explores secondary school curriculum development and assessment. The course helps preservice teachers to build a repertoire of teaching strategies by exploring methods of induction, inquiry, and constructionism. Praxis III domains are addressed through activities in the classroom. Lab component includes field-based experiences with potential experience directly related to classroom teaching. Course includes 2 credit hour lab scheduled with EDSE 371B.

397T Secondary Education Tutorial (1–15) Prereq: Honors Tutorial College and perm; 297T and 299T


399T Secondary Education Tutorial (1–15) Prereq: Honors Tutorial College and perm; 397T and 399T.

Special Education (EDSP)

250 Field Experience in Special Education (Block I) (4) Prereq: Block I and adv standing. Serve 80 hours as a special education teacher’s assistant. Review the teacher’s directions and instructional plans for working with pupils until given the responsibility to develop your own plans which may be appropriate near the end of the quarter.

271 Introduction to Education of Exceptional Children and Youth (4) Comprehensive survey of special education programs emphasizing multidisciplinary approach, integration, and current trends in providing instruction to persons with exceptionalities, and legal rights under the Individuals with Disabilities Education Act are covered. Clinical and/or field experience is included. Middle level, secondary, and special education majors should not register for this course, but should enroll in the Sophomore Block (EDCI 200, 201 and 202) to be eligible for credit in early childhood education majors. No credit for both 271 and 210.

272 Introduction to Education of Mentally Retarded Children and Youth (3) Etiology, diagnosis, classification, learning potential, and general characteristics of children with mental retardation with an emphasis on psychosocial implications of retardation on individual, family, and community.

355 Technological Applications in Special Education (4) Prereq: Block I. Develop knowledge and experience necessary to use microcomputers and other technology with persons who have special needs. Consideration is given to the functionality of hardware, software, and peripherals available for use with these individuals. A focus will be on the concerns of special education teachers in using Computer Aided Instruction and other technology with students including: compensation for sensory, physical, communication, and learning handicaps.

360 Field Experience in Special Education/ Mild to Moderate Educational Needs (4) Prereq: Block II. Provides a minimum of 80 direct field hours of practical application of concepts and skills introduced in special education in the prerequisite and current block courses; direct observations, planning, and teaching persons with mild to moderate educational needs under the supervision of a cooperating teacher and University supervisor.

361 Field Experience in Special Education/ Moderate to Intensive Educational Needs (4) Prereq: Block II and adv standing. Provides a minimum of 80 direct field hours of practical application of concepts and skills introduced in special education in the prerequisite and current block courses; direct observations, planning, and teaching persons with moderate to intensive educational needs under the supervision of a cooperating teacher and University supervisor.
Mild to Moderate Educational
Courses / Education

370 Classroom Management of Learners with Special Needs (4)
Prereq: Block II. Emphasizes applied behavior techniques to reduce behavioral problems, maximize learning, and increase pupil and teacher rapport for students with mild to moderate educational needs. Procedures will move systematically from teacher control to shared control with learner to learner self-control techniques. Course content and activities will focus on the study of student needs and behaviors with identification of selected management methods. Management techniques are explained, demonstrated, practiced in class, applied in school, and reported in a class seminar and in writing. The course continues to develop teacher skills applicable in field teaching, student teaching, and professional teaching.

371 Teaching the Preschool Handicapped (3)
Prereq: Block II. Purpose, organization, and methods utilized for preschool children with special needs. Variety of program models and delivery systems covered.

373 Curriculum Planning for Learners with Special Needs (4)
Prereq: Block I and adv standing. Development of a curriculum rationale; a philosophy; a model; skills in program planning and development; identification, adaptation of curricula, instructional plans, and materials fitting to the goals of the school and the needs of exceptional learners in special and regular classrooms. Skills are developed in planning a school curriculum, a classroom curriculum, a unit of study, lesson plans, and selection of instructional materials.

374 Nature and Needs of Learners with Mild to Moderate Educational Needs (5)
Prereq: Block I and adv standing. A comprehensive review of the nature and needs of learners with mild to moderate educational needs. A cross-curricular orientation is followed, with an emphasis on the characteristics of the traditional high incidence disability areas of specific learning disabilities, emotional/behavioral disorders, and mild mental retardation. Topics include etiology; definitions; culturally sensitive identification and assessment procedures; educational services; cognitive, academic, and social-emotional characteristics; life span ramifications; and current issues in the field.

376 Methods for Learners with Mild to Moderate Educational Needs (5)
Prereq: Block III and adv standing. Organization and practice of teaching including selection, planning, and teaching of appropriate unit based, project based, problem based, community based, cooperative, and collaborative learning with emphasis on implementation of current theory and research to strengthen personal-social-vocational adjustment of children with mild-moderate disabilities. Specific techniques will be presented and practiced on how to develop, remEDIATE, or compensate for student learning disabilities, learning styles, learning modalities, working styles, study skills, and intelligences.

377 Career Development and Transition Planning for Learners with Special Needs (4)
Prereq: Block II and adv standing. A comprehensive overview of the continuum of vocational options at the secondary and postsecondary levels. Procedures for preparing children and adults with exceptionalities to fulfill their career roles as family members, community residents, as well as workers also will be examined.

378 Principles of Work for Persons with Disabilities (3)
Prereq: 272 or 272, or EDCI 201, or perm. Development of skills for understanding and agency mission, work values, plant layout, production flow, work site analysis, ergonomics, adaptive fixturing, time study, scheduling, work motivation, quality control, safety, evaluation, and records to enhance sheltered or community employment programs for persons with disabilities.

379 Principles of Habilitation Programming for Persons with Disabilities (3)
Prereq: 271 or 272 or perm. Development of skills used in selecting what to teach and planning to teach by using objectives, organization, methods, materials, and curricula essential to teaching self-care, homemaking, family, and community skills to adults with disabilities.

401 Interventions for Students with Emotional and Behavioral Needs (4)
Prereq: Block III and adv standing. Development and teaching of intervention strategies for students with mild to intensive educational needs who experience emotional and behavioral difficulties. Specific methods in the areas of behavioral interventions, positive behavioral supports, social skills training, psychoeducational techniques, assessment, collaboration, crisis intervention and communication skills. Related skills in functional behavior assessment and developing behavior intervention plans are covered.

460 Field Experience in Special Education—Mild to Moderate Educational Needs (4)
Prereq: Block III and adv standing. Field-based experience designed to provide supervised practical experience in teaching children or youth with mild to moderate educational support needs in the public school setting. Field experience includes diagnostic and corrective teaching in areas of reading, arithmetic, and language arts.

461 Field Experience in Special Education—Moderate to Intensive Educational Needs (4)
Prereq: Block III and adv standing. Practical application of concepts and skills introduced in the special education Block IV courses: supervising, managing, and teaching persons with moderate to intensive educational needs.

463 Field Experience in Special Education—Early Childhood Special Education (3)
Coreq: 371. Field-based experience designed to provide supervised practical experience in early childhood special education.

473 The Nature and Needs of Learners with Moderate to Intensive Educational Needs (5)
Prereq: Block I and adv standing. Analyses of etiologies, characteristics, and assessment of learners, with mental retardation, physical and sensory impairments, medical and behavioral disabilities. Medical, behavioral, social, communicative, assistive devices, psychosocial aspects, legal, ethical, cultural, family, self-determination, and equity issues are studied in relation to the characteristics and needs of learners from birth to adulthood with moderate to intensive educational needs.

475 Methods and Materials for Teaching Persons with Moderate to Intensive Educational Needs (5)
Prereq: 473, Block III, and adv standing. Design and application of multifaceted/individualized assessment procedures, curricular adoption/development, IEP transition, technology planning, proficiency testing, instructional strategies including age appropriate, functional, and community reference skills; use of positive behavioral supports, adaptive equipment, assistive devices, and instructional materials to promote self-determination. Methods are applied through case-based instruction, hands-on participation, and cooperative teaching.

477 Consultation and Collaboration in Special Education (4)
Prereq: Block II and adv standing. Comprehensive overview and development of professional competencies related to collaboration and consultation in special education. Content includes the consultation process, communicating with professionals and parents, working in teams, legal and ethical issues, advocacy, and interdisciplinary collaboration, and collaborating with families of students with special needs.

485 Diagnosis and Evaluation of Children with Disabilities (4)
Prereq: Block II. Cover the traditional and non-traditional methods of assessment, screening and classification, collection and appropriate application of clinical data utilizing laboratory and field experiences.

490 Study of Special Education (1-5, max 15)
Prereq: Perm of area coordinator. Independent analysis of problems, special interests, concerns, with assigned and suggested readings, programmed experiences, and submission of final report, with guidance of faculty member.

Electronic Media (EM)

Formerly Radio-Television (RTV)
The following courses are available only at the Ogdensburg, Rome, and Utica campuses for the A.A.S. in electronic media:

101 Introduction to Electronic Media (3)
(fall) Overview of field, facilities, student responsibilities, and career expectations in electronic media.

122 Radio-Television Performance (4)
(spring) To provide overview of responsibilities required for radio and television announcing, and to provide an introduction to the concepts necessary to develop proficiency in performance skills.

189 Electronic Media Workshop—Non-Majors (1-3)
Short course in specific topics in electronic media applications. Emphasizes hands-on practice on subjects such as visual composition, camera movements, video editing, lighting, audio editing, and media digitization. Intended for non-majors.

209 Topics in Radio-Television Engineering (3, max 18)
Intensive study of all functions of electronics as they relate to topics in field. Prepares students who complete all topics to take FCC General Class and/or SBE exams required for broadcast engineering positions. Lab time included with instruction on operation of test equipment and facilities maintenance.

211 Audio Production-Direction (4)
(winter) Principles of basic radio production and development of criteria for evaluation of radio production. 2 lec, 4 lab.

212 Intro to Multimedia Production (4)
Prereq: EM101 Using Short course in specific topics in electronic media applications. Emphasizes hands-on practice on subjects such as visual composition, camera movements, video editing, lighting, audio editing, and media digitization. Intended for non-majors.

214 Advanced Audio Production/Performance (4)
Prereq: 211. (fall, spring) Innovative techniques for production and performance of audio material. Investigation and study of audio production development, and individual problems.

215 Intro to Website Design (4)
Prereq: EM212. Webpage creation and Internet functioning, using HTML, integrating media into Webpages, posting pages to the Web, and server functions.

216 Introduction to Video Production (4)
(spring) Principles of basic television production development of criteria for evaluation of television production. 2 lec, 4 lab.

217 Advanced Video Production (2, max 4)
Prereq: 216. (winter, spring) Applications of studio and field production with emphasis on innovative techniques.

218 Intro to Digital Media (4)
Prereq: ART 113, EM 212. Photography and videography basics through development and integration into current digital media applications.

257 Advertising in the Broadcast and Cable Media (4)
(winter) Introduction to principles and practices of advertising and selling of television and radio media situations. Format includes substantial instruction and interaction with individuals employed in station sales departments, and preparation of materials for sales strategies and campaigns.
The following courses are available on the Lancaster and Southern campuses:

110 Basic Electronics (4)

111 AC and DC Circuit Analysis (4)
Prereq: 110, MATH 113, or perm. AC and DC electrical circuits. Application of network theorems to circuits containing resistors, capacitors, inductors, and transformers emphasized. 2 lec, 4 lab.

112 Industrial Electronics (4)
Prereq: 111 or perm. Advanced study of solid state devices, theorems and techniques in circuit analysis. Transistor amplifiers, bias, impedance matching and classes of operation, integrated circuit theory, and application. 2 lec, 4 lab.

120 Digital Electronics (4)
Prereq: 111 or perm. Comprehensive study of pulse and digital circuits used in industry. Wave shaping, switching circuits, trigger circuits, nonsinusoidal oscillators, and sequencing systems. Digital concepts, Boolean algebra, logic circuits, memory circuits, arithmetic unit, and logic application to electronic control circuits. Field trips part of lab activity. 2 lec, 4 lab.

134 Direct Current Circuit Analysis (5)
Prereq: 110 or perm. Direct current electrical theory, applications, and circuit analysis. 3 lec, 4 lab.

135 Alternating Current Circuit Analysis (5)
Prereq: 134 or perm. Alternating current electrical theory, applications, and circuit analysis. Sinusoidal wave forms, inductive reactance, resonance circuits, and RC circuits. Power transformers and polyphase systems. Power generation and distribution. 3 lec, 4 lab.

288 Personal Computer Maintenance (4)
Prereq: 236B or perm. Repair and troubleshooting of the personal computer emphasizing the IBM series. Topics will include specifications, documentations, time keeping, diagnostic programs, test instruments, logic analyzers, and in-circuit emulation. Other personal computers may be considered. 2 lec, 4 lab.

289 Electronic Troubleshooting and Repair (4)
Prereq: 112 and 120 or perm. Fundamentals of test equipment applications. Emphasis on repair of consumer and industrial analog equipment. 2 lec, 4 lab.

299 Special Problems (1–3, max 5)
Prereq: perm. Individualized projects or internship experiences under supervision of faculty member in electronics technology.

Electronics Technology (ETCH)

The following courses are available on the Lancaster and Southern campuses:

110 Basic Electronics (4)

111 AC and DC Circuit Analysis (4)
Prereq: 110, MATH 113, or perm. AC and DC electrical circuits. Application of network theorems to circuits containing resistors, capacitors, inductors, and transformers emphasized. 2 lec, 4 lab.

112 Industrial Electronics (4)
Prereq: 111 or perm. Advanced study of solid state devices, theorems and techniques in circuit analysis. Transistor amplifiers, bias, impedance matching and classes of operation, integrated circuit theory, and application. 2 lec, 4 lab.

120 Digital Electronics (4)
Prereq: 111 or perm. Comprehensive study of pulse and digital circuits used in industry. Wave shaping, switching circuits, trigger circuits, nonsinusoidal oscillators, and sequencing systems. Digital concepts, Boolean algebra, logic circuits, memory circuits, arithmetic unit, and logic application to electronic control circuits. Field trips part of lab activity. 2 lec, 4 lab.

134 Direct Current Circuit Analysis (5)
Prereq: 110 or perm. Direct current electrical theory, applications, and circuit analysis. 3 lec, 4 lab.

135 Alternating Current Circuit Analysis (5)
Prereq: 134 or perm. Alternating current electrical theory, applications, and circuit analysis. Sinusoidal wave forms, inductive reactance, resonance circuits, and RC circuits. Power transformers and polyphase systems. Power generation and distribution. 3 lec, 4 lab.

140A-J Power Distribution Systems (1–5, max 5 each segment)
Prereq: 135 or perm. (A) residential electrical wiring, (B) commercial electrical wiring, (C) industrial electrical wiring, (D) National Electrical Code, (E) low-voltage wiring, (F) high-voltage systems, (G) fire alarm systems, (H) electrical blueprints and specifications, (I) new developments in power distribution.

220 Electrical Motors, Control Circuits, and Computers (4)
Prereq: 111 or perm. Industrial power rotating machines and computer control. Motor principles, classification, and application. Motor control circuits, single-phase, 3-phase systems, relays, and overload protection. Testing and maintenance procedures. Field trips part of lab activity. 2 lec, 4 lab.

221A Programmable Controllers, Instrumentation and Process Control I (4)
Prereq: 220 or perm. A study of process control systems and transducers and controller principles. Emphasis on instrumentation, programmable controllers, and analog and digital control of the manufacturing process. 2 lec, 4 lab.

221B Programmable Controllers, Instrumentation and Process Control II (4)
Prereq: 221A or perm. Continuation of 221A. Emphasis on process control. 2 lec, 4 lab.

234 Industrial Electronics and Linear Integrated Circuits (5)
Prereq: 112 or perm. Theory and application of solid state industrial control. Silicon control rectifiers, phototransistors, differential amplifiers, oscillators, and phase shift controls. 3 lec, 4 lab.

236A Microprocessor and Computer Basics (4)
Prereq: 120 or perm. Introduction to computer organization and design, including ROMs, RAMs, microprocessors, instruction sets, hardware, software, and machine and assembly language programming. 2 lec, 4 lab.

236B Microprocessor and Computer Basics (4)
Prereq: 236A or perm. Continuation of 236A. Emphasis is on computer interfacing. 2 lec, 4 lab.

236C Robotics (6)
Prereq: 236B, MATH 118; or perm. Introduction to fundamentals of robotics. 3 lec, 6 lab.

237 Design and Production of Electronic Circuits (3)
Printed circuit theory, design, application, and fabrication. 2 lec, 2 lab.

240A-P Electronic Communication Systems (3–5)
Prereq: 234 or perm. Introduction to various types of communication systems, including microwave, R.F., television, audio, and sound systems. 2 lec, 2 lab.

250 Computer Programming for Electronic Circuit Analysis (3)
Prereq: 120 or perm. Introduction to high-level language programming for solution of electronic circuit problems. 2 lec, 2 lab.

260 Data Communications and Computers (4)
Prereq: 236B or perm. A study of computer communications systems, including telecommunications. Topics include modems, amplifiers, local area networks (LANs), communication standards, and protocols. An introduction to the principles of radio, television, telephone, and digital networks will also be studied. 2 lec, 4 lab.

288 Personal Computer Maintenance (4)
Prereq: 236B or perm. Repair and troubleshooting of the personal computer emphasizing the IBM series. Topics will include specifications, documentations, time keeping, diagnostic programs, test instruments, logic analyzers, and in-circuit emulation. Other personal computers may be considered. 2 lec, 4 lab.

289 Electronic Troubleshooting and Repair (4)
Prereq: 112 and 120 or perm. Fundamentals of test equipment applications. Emphasis on repair of consumer and industrial analog equipment. 2 lec, 4 lab.

299 Special Problems (1–3, max 5)
Prereq: perm. Individualized projects or internship experiences under supervision of faculty member in electronics technology.
Courses / Engineering

415 Unit Operations Laboratory I (3) Prereq: 307, 347, 408. (Fall) Lab practice in illustration of principles of selected unit operations, thermodynamics, and applied kinetics; and to aid students in gaining confidence in handling of chemical engineering equipment. Development of ability to devise and conduct chemical engineering experiments with minimum supervision and to report results satisfactorily will be stressed.

416 Unit Operations Laboratory II (3) Prereq: 308, 347, 408. (Winter) Continuation of 415. See 415 for description.

417 Process Control Laboratory (2) Prereq: 442 or with 442. (Spring) Laboratory for 442.

418 Engineering Materials Laboratory (2) Prereq: 331. (Fall, winter, spring, summer) Demonstrations and experiments supporting relationships which exist between the physical treatment and the structure and properties of materials.

430 Metallic Corrosion (4) Prereq: 331. Basic principles of corrosion including electrochemical foundation, influence of environment, stress, strain, and structure. Selected lab experiments. 4 lec.


443 Chemical Engineering Design I (4) Prereq: 308, 347, 448. (Winter) Preliminary design of a chemical process. Process synthesis, computer flowsheeting, layout, safety, and economics. Includes trips to various chemical plants. Also involves the assessment of skills from explicit and implicit prerequisite courses. 2 lec, 4 rec.

444 Chemical Engineering Design II (4) Prereq: 443. (Spring) Continuation of 443. See 443 for description. 2 lec, 4 rec.

448 Safety in the Process Industry (3) Prereq: 307, 347, 348. (Fall) Hazard and operability analysis of chemical processes and the subsequent safe operation criteria. 3 lec.

450 Fundamentals of Materials Analysis (3) Prereq: 331 or perm. An overview of both classical and modern techniques of materials analysis. Topics covered include classical optical spectroscopies (IR, FTIR, Raman, UV/VIS), and modern surface techniques, such as AES, XPS/ESCA, and RBS. 3 lec.

452 Introduction to Transport Phenomena (3) Prereq: 347, 440. Integration of fluid flow, heat transfer, and mass transfer into a coherent topic. Origin of general equations and methods of application to specific engineering problems. Introduction to contemporary engineering science. 3 lec.

460 Atmospheric Pollution Control (4) Prereq: 307 or ME 321, or perm. Sources of air pollution from major industries, internal combustion engines, and other sources. Techniques available for measuring particulate and gaseous pollutants in environmental air and their sources. Techniques available for control and future possibilities for control of air pollution. Bases for air pollution legislation. 4 lec.

461 Atmospheric Chemistry (3) Prereq: CHEM 153, PHYS 253. Homogeneous chemistry of the lower and middle atmosphere, emphasizing processes by which human activity influences the environment. 3 lec.

477 Introduction to Polymer Synthesis (3) Prereq: 306 or CHEM 454. Polymer structure, reaction mechanics, kinetics, reactors, processing, and properties. 3 lec.

481 Biochemical Engineering (3) Prereq: 308, 347, 400, pr. perm. Study of processes in chemical engineering that depend on biological systems. Overview of biological basics, enzyme kinetics, major metabolic pathways, cell growth characteristics, essential of recombinant DNA technology, bioreactor design and control, and an introduction of purification methods. 3 lec.

482 Topics in Bioseparations (3) Prereq: CHE, CHEM, Life Sci or pr. Basic techniques such as cell disruption, centrifugation, precipitation, micro- and ultrafiltration, various forms of chromatography for the separations of biomolecules, especially proteins, will be introduced. Some emphasis will be placed on preparative and large scale applications. 3 lec.

483 Biomedical Engineering (3) Prereq: i/s in engineering, chem, physics, bioi. Biomedical engineering with an emphasis on cell and tissue engineering.

492 Special Investigations (1–3, max 9) Prereq: perm. Individual or small-group work, under staff guidance, in research or advanced study in particular field of chemical engineering. (Only three hours of special investigations in any area can be counted towards the CHE electrical engineering elective requirement.)

493 Intercollegiate Design Competition (1–3, max 9) Prereq: individual or small group participation, under faculty guidance, in regional or national student design competition. (A maximum of three credit hours may be applied toward the CHE mechanical engineering elective requirement.)

499 Chemical Engineering Senior Assessment (1) Prereq: 443. Assessment of skills, behaviors, and attitudes of students graduating in chemical engineering. Examination of retention from prerequisite courses. Readings and discussion of professional and ethical responsibility, the impact of engineering solutions in a global and societal context, the need for lifelong learning, and knowledge of contemporary issues. 2 rec.

Engineering, Civil (CE)

200 Civil Engineering Fundamentals (1) (spring) Overview of civil engineering profession and specialization areas, value of professional organizations and lifelong learning, introduction to departmental facilities, description of curriculum, and advising responsibilities. 1 lec.

201 Civil Engineering Computational Techniques (3) Prereq: MATH 263A or concurrent. (Spring) Introduction to methods of problem solving, use of computers for calculations, applications or problem solving to civil engineering. 3 lec.

210 Plane Surveying (4) Prereq: MATH 321 or 326A, or perm. (Fall) Basic theory and field practice in measurement of distance, elevation, and angle; introduction to GPS and photogrammetry. 3 lec, 3 lab.

220 Statics (4) Prereq: MATH 261C, PHYS 251. (Fall, winter, spring) Laws of equilibrium of forces, friction, centroids, and moment of inertia. 4 lec.

222 Strength of Materials (4) Prereq: grade of C or better in 220. (Fall, winter, spring) Simple stress and strains, bending, torsion, beam deflection, columns, and combined stresses. 4 lec.

223 Strength of Materials Laboratory (1) Prereq: 222 or with 222. (Fall, winter, spring) Testing of various materials under axial compression, tension, flexure, torsion, impact, fatigue. Use of electrical, mechanical, and photoelastic strain measuring equipment. 2 lab.

311 Route Engineering (3) Prereq: 210. (Winter) Horizontal and vertical curves; geometric design of highways; earth–work distribution. 3 lec.

316 Construction Engineering and Management (3) Prereq: Jr. (Fall). Overview of construction engineering and management, project funding, bidding and selection process, design and construction interface, competitive and negotiated contracts, planning and scheduling, estimation, equipment productivity and safety. 3 lec.

330 Structural Theory I (5) Prereq: 201, C or better in 222. (Fall) Determinacy requirements; analysis of statically determinate structures; influence lines; deflections; introduction to analysis of statically indeterminate structures. 5 lec.

331 Structural Theory II (5) Prereq: C or better in 330. (Winter) Indeterminacy conditions for structures; slope deflection method; moment distribution method; influence lines; introduction to computer methods. 3 lec.

340 Fluid Mechanics (4) Prereq: C or better in ME 224. (Fall, winter, spring) Statics and dynamics of incompressible flows, dimensional analysis and similitude, pipe flow, principles of lift and drag, introduction to boundary layers. 4 lec.

341 Fluid Mechanics Laboratory (1) Prereq: 340 or with 340. (Fall, winter, spring) Lab techniques, calibration principles, fluid and flow measurements. 2 lab.

342 Applied Hydraulics (3) Prereq: C or better in 340. (Spring) Flow and pressure distribution in multi-loop networks, dynamics of flow in pumps and turbines, uniform and nonuniform flow in open channels, culvert hydraulics, hydraulic transients. 3 lec.

343 Hydrology (3) Prereq: 340, ISE 304 or with ISE 304. (Spring) Hydrologic cycle. Precipitation and runoff data; groundwater hydraulics; infiltration; peak runoff calculations. Application to water resource problems. 3 lec.

353 Basics of Environmental Engineering (3) Prereq: Jr. (Spring) Engineering concepts, theory, design, and practice as applied to solution of problems of environmental technologies, waste management, drainage, and control of water, soil, and atmospheric pollution; social and environmental impact of these solutions. 3 lec.

361 Transportation Engineering (3) Prereq: 311. (Spring) Introduction to Transportation Engineering with emphasis on transportation planning concepts and multi-modal design elements. 3 lec.

370 Geotechnical Engineering (4) Prereq: 222, 340, GEOI 283, or concurrent with 340. (Winter) Soil compositions, physical and chemical properties, and classifications; water movement and seepage problems; consolidation and shear stress; applications to earth structures, retaining walls, slope stability, bearing capacity, and settlement. May be taken as 370 for grad credit except by civil engineers. 4 lec.

371 Soil Engineering Laboratory (1) Prereq: 370 or concurrent with 370. (Winter) Classification of soils and determination of their properties through tests; grain size analysis, Atterberg limits, relative density, Proctor testing, permeability, direct shear, and consolidation. 2 lab.

380 Civil Engineering Materials (3) Prereq: 222. (Spring) Examination of the properties of materials used in civil engineering applications including metals, concrete, timber, and composites.