BALL STATE UNIVERSITY
ACADEMIC POSTING
2011-2012

This posting may contain all or part of the following: new, revised, and dropped programs, courses and prefixes. The posting period begins January 9, 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 4, 2011 is Fall Semester 2012.Graduate materials posted after April 4, 2011 have an implementation date of Fall Semester 2012.*

College of Applied Sciences and Technology

DEPARTMENT OF FAMILY AND CONSUMER SCIENCES

FAMILY AND CONSUMER SCIENCES: CHILD LIFE (FCCL)

Revised:

369 (FCS 369) Internship in Family and Consumer Sciences (1-6) Provides the opportunity for the student to work in an established internship setting to gain professional experience in one's specific area of study.
Prerequisite: FCFC 100, 250, 265, 275, 465; BIO 254; EDPS 351; NUR 101, 103; 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.

FAMILY AND CONSUMER SCIENCES: FASHION APPAREL (FCFA)

Dropped:

388 Apparel Manufacturing and Wholesaling (3)

New:

275 Apparel Design Presentation Technology 2: Advanced Industry Software (3) Provides knowledge and skills in use of the computer focusing on Adobe Photoshop and Illustrator for apparel and textile product design and presentation.
Prerequisite: FCFA 102, 265.

Revised:

303 Draping (3) Adapting standard patterns to individual proportions, designing garments, and creating an original garment by the flat pattern method.
Prerequisite: FCFA 202.

369 (FCS 369) Internship in Family and Consumer Sciences (1-6) Provides the opportunity for the student to work in an established internship setting to gain professional experience in one's specific area of study.
Prerequisite: FCFA 303 or 401; MKG 300; 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.

FAMILY AND CONSUMER SCIENCES: CHILD DEVELOPMENT (FCFD)

Revised:

369 (FCS 369) Internship in Family and Consumer Sciences (1-6) Provides the opportunity for the student to work in an established internship setting to gain professional experience in one's specific area of study.
Prerequisite: FCFC 465.
A total of 12 hours of credit may be earned, but no more than 6 in any one semester or term.

FAMILY AND CONSUMER SCIENCES: FASHION MERCHANDISING (FCFM)

Revised:

369 (FCS 369) Internship in Family and Consumer Sciences (1-6) Provides the opportunity for the student to work in an established internship setting to gain professional experience in one's specific area of study.

Prerequisite: FCFA 345, 388; MKG 300; 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.

FAMILY AND CONSUMER SCIENCES: FOODS AND NUTRITION (FCFN)

Dropped:

575 Catering for Profit (3)

Revised:

369 (FCS 369) Internship in Family and Consumer Sciences (1-6) Provides the opportunity for the student to work in an established internship setting to gain professional experience in one's specific area of study.

Prerequisite: FCFN 250 or 400, 310 and 476; documented experience of at least 500 hours of appropriate hospitality or food service experience and 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.

FAMILY AND CONSUMER SCIENCES: FAMILY STUDIES (FCFS)

Revised:

369 (FCS 369) Internship in Family and Consumer Sciences (1-6) Provides the opportunity for the student to work in an established internship setting to gain professional experience in one's specific area of study.

Prerequisite: FCFC 250; 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.

FAMILY AND CONSUMER SCIENCES: GENERAL (FCGI)

Revised:

669 (FCS 569) Internship in Family and Consumer Sciences (1-6) Provides the opportunity for the student to work in an established internship setting to gain professional experience in one's specific area of study.

Prerequisite: FCFN 310; 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.

FAMILY AND CONSUMER SCIENCES: INTERIOR DESIGN (FCID)

Revised:

369 (FCS 369) Internship in Family and Consumer Sciences (1-6) Provides the opportunity for the student to work in an established internship setting to gain professional experience in one's specific area of study.

Prerequisite: FCID 324; 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.

FAMILY AND CONSUMER SCIENCES: RESIDENTIAL PROPERTY MANAGEMENT (FCPM)

Revised:

669 (FCS 569) Internship in Family and Consumer Sciences (1-6) Provides the opportunity for the student to work in an established internship setting to gain professional experience in one's specific area of study.

Prerequisite: FCPM 275, 305; FCFN 310; ACC 201; 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.

FAMILY AND CONSUMER SCIENCES (FCS)

Dropped:

369 Internship in Family and Consumer Sciences (3-6)

569 Internship in Family and Consumer Sciences (3-6)

Revised:

669 (FCS 569) Internship in Family and Consumer Sciences (3-6) Provides the opportunity for the student to work in established internship settings to gain professional experience in one's specific area of study.

Prerequisite: permission of the department chairperson.
A total of 6 hours of credit may be earned.
Open only to departmental majors.

697 Research Methods in Family and Consumer Sciences (3) Introduces Family and Consumer Science students to the research process as informed consumers and future investigators. Topics include the research process; quantitative, qualitative, mixed methods, and action research designs; and evaluation of research statistics. Includes scientific writing, strategies for conducting literature searches, research ethics, and elements of a research proposal.

SCHOOL OF PHYSICAL EDUCATION, SPORT, AND EXERCISE SCIENCE

EXERCISE SCIENCE (EXSC)

Dropped:

412 Internship in Exercise Programs for the Older Adult (1-4)

PHYSICAL EDUCATION: PROFESSIONAL (PEP)

New:

611 Practicum in Sport and Exercise Psychology (3) This course, taught by a certified sport psychology consultant, will entail analysis, synthesis, and application of advanced sport and exercise psychology topics and techniques with individuals and teams. Special emphasis will be placed on blending theory and ethical guidelines with applied issues through fieldwork experiences with various populations.
Prerequisite: PEP 609; permission of the instructor or program coordinator.

Revised:

164 Life Skills for Student Athletes (3) Introduces personal values and health concepts affecting both academic and athletic performance. Life skills such as values and value clarification, diversity, communication skills, decision making, time and stress management, alcohol and other drug/addiction education, sexuality issues, sport nutrition, and career development issues are addressed.

409 Psychological/Social Issues in Sport (3) Covers practical applications of the social and psychological issues which influence individual and/or team performance; content based on two domains of the National Coaching Standards and the NASPE/NASSM Standards for Sport Management Programs.
Prerequisite: permission of the program coordinator.
Open only to sport administration and aquatic majors.

SPORT ADMINISTRATION (SPTA)

Dropped:

606 Operations and Oversight of Aquatic Facilities (3)

Revised:

290 Sport Ticketing and Merchandising (3) An exploration and application of sport industry sales processes focused upon ticket sales, sponsorship sales, merchandising, and fundraising. Introduces the sales process including prospecting, calling, presenting, handling objections, negotiating, and closing. Completion of sales training and making sales calls for a sport organization are an integral component of the class.
Open only to sport administration majors.

303 Sport Marketing (3) An examination of the unique marketing processes within the sport setting, including an emphasis on: sport consumer demographics and psychographics, sport consumer behavior, target markets and market segmentation, trademarking, licensing and merchandising, sport sponsorships, and endorsements.
Open only to sport administration majors.

305 Finance and Fundraising in Sport (3) Investigation of the financial concepts and theories and their application to sport including: professional, intercollegiate, recreational, and commercial sport industries. Emphasis on the importance of basic financial principles in understanding business decisions as related to sport.
Open only to sport administration majors.

698 Internship in Sport Administration (9) A supervised work and learning experience in the application of sport management knowledge and skills. Internships are to be completed with organizations within the sport industry approved by the program coordinator including professional, collegiate, interscholastic, and amateur organizations.
Prerequisite: 12 hours earned (*C* or better) from the graduate sport administration program (core or approved electives), permission of program coordinator.
Open only to physical education and sport: sport administration majors.

DEPARTMENT OF TECHNOLOGY

TECHNOLOGY: CONSTRUCTION TECHNOLOGY (TCST)

Revised:

310 Ethics in Construction (3) Examines professionalism within the modern construction industry. Traces the development of building professions with regard to the foundations of current practice. Focuses on career options and planning, leadership, ethics, and ethical practice using case studies and selected readings.
Prerequisite: TCST 104.

420 Construction Finance and Law (3) The principles of business law applicable to the construction process including employer, employee, and client rights and obligations, and partnerships. The principles of finance related to construction are also covered.
Prerequisite: ACC 201; MGT 200.

TECHNOLOGY: DEPARTMENT (TDPT)

New:

101 Fundamentals of Safety and Health Technology (3) Study of accident-prevention and loss-control methods, procedures, and programs and their impact on people and workplaces; and the ethical application of codes and standards, applicable safety and health related practices, and safety

engineering and management principles.

201 Safety and Health Regulations and Compliance (3)
Mandatory safety and health regulations and compliance
standards and procedures are investigated based upon
Occupational Safety and Health Administration (OSHA),
insurance institute, and workplace standards/practices.

**301 Developing and Managing Safety and Health
Programs (3)** An analysis of the concepts, relationships, and
principles of managing an organization's occupational safety
and health technology duties and functions; and the
development of safety objectives and policies, training
procedures and practices for integration into an organization,
and evaluation and management of risk and program
implementation and evaluation.
   Prerequisite: TDPT 101 or permission of the instructor.

TECHNOLOGY: EDUCATION (TEDU)

Revised:

698 Seminar in Technical Education (3) An exploration of
current problems and issues in technology and engineering
education and career and technical education.

College of Architecture and Planning

DEPARTMENT OF ARCHITECTURE

ARCHITECTURE (ARCH)

Dropped:

605 Design and Presentation Techniques. (1)

New:

473 Historic Preservation Colloquium (3) Seminar
investigates how we have come to understand and value the
past, scrutinizing disparate forms of preservation:
environmental protection, building restoration, monuments and
memorials, and ancestor worship, to foster an understanding of
the sociocultural and historical complexities of preservation
and concepts of history as they inform contemporary historic
preservation work.
   Prerequisite: permission of the program director.

Revised:

428 History of North American Architecture (3) American
architecture and urbanism from its colonial beginnings to the
present. Emphasizes European antecedents,

transformation by American conditions, and the rise of
distinctly American architecture. Discusses methods of
disseminating architectural knowledge and conflicting points
of view.
   Prerequisite: permission of the program director.

440 Introduction to Historic Preservation (3) Survey of
history and philosophy of preservation in the United States and
Europe. Emphasizes the origins of current philosophies
and approaches to preservation in the United States and the
variety of organizations and agencies involved in preservation.
   Prerequisite: permission of the program director.

441 Historic Preservation Law and Planning (3) Survey of
fundamental legislation in the preservation field at federal,
state, and local levels. Emphasizes applying knowledge of
laws and regulations to actual situations in practice. Survey of
types of preservation planning used by federal, state, and local
governments.
   Prerequisite: ARCH 440; permission of the program
director.

**442 Historic Preservation Research Methods and
Documentation (3)** Introduction to methods of recording and
registering historic properties by written means, including
architectural descriptions and statements of significance for
buildings, structures, districts, landscapes, objects, and
archaeological sites. Emphasizes development of skills in
primary and secondary research methods in historic
preservation and principles of scholarly and professional
writing.
   Prerequisite: permission of the program director.

444 Historic Preservation Economics (3) Developing skills
in assessing the economics of preserving historic properties.
Emphasizes exercises involving feasibility studies, pro formas,
revolving funds, and identification of feasible users. Surveys
also Main Street program and heritage tourism and heritage
areas as revitalization techniques.
   Prerequisite: permission of the program director.

**445 Historic Preservation Design and Graphic
Documentation (3)** Introduction to graphic techniques,
methods, and design processes used in the documentation and
recordation of historic properties, with emphasis on manual
and computer aided measured drawing and representation,
laser technologies, photo documentation, laboratory and field
procedures, interpretation of physical conditions, and the
design and development of presentation techniques.
   Prerequisite: permission of the program director.

447 Historic Preservation Technology 1 (3) Survey of the
materials and systems of construction used in historic
buildings and the causes of deterioration, obsolescence, and
failure in buildings. Emphasizes developing diagnostic skills
through field investigations and laboratory analysis and
exercises.
   Prerequisite: permission of the program director.

449 Historic Preservation Technology 2 (3) Survey of the methods and philosophies of conservation and rehabilitation for historic buildings. Emphasizes identifying appropriate solutions to problems of deterioration and appropriate rehabilitation and restoration approaches. Field trips, laboratory analysis, and projects.
Prerequisite: permission of the program director.

506 Historic Preservation Design Studio (6) Selected problems and issues in historic preservation at all scales in an applied context. Opportunity to implement concepts learned in a creative environment. Field trips to project sites.
Prerequisite: graduate status in the College of Architecture and Planning or permission of the program director.

540 Introduction to Historic Preservation (3) Survey of history and philosophy of preservation in the United States and Europe. Emphasizes origins of current philosophies and approaches to preservation in the United States and the variety of organizations and agencies involved in preservation.
Prerequisite: graduate status in the College of Architecture and Planning or permission of the program director.
Not open to students who have credit in ARCH 440 or equivalent.

541 Historic Preservation Law and Planning (3) Survey of fundamental legislation in the preservation field at federal, state, and local levels. Emphasizes applying knowledge of laws and regulations to actual situations in practice. Survey of types of preservation planning used by federal, state, and local governments.
Prerequisite: graduate status in the College of Architecture and Planning or permission of the program director; ARCH 540.
Not open to students who have credit in ARCH 441 or equivalent.

542 Historic Preservation Research Methods and Documentation (3) Introduction to the methods of recording and registering historic properties by written means, including architectural descriptions and statements of significance for buildings, structures, districts, landscapes, objects, and archaeological sites. Emphasizes development of skills in primary and secondary research methods in historic preservation and principles of scholarly and professional writing.
Prerequisite: graduate status in the College of Architecture and Planning or permission of the program director.
Not open to students who have credit in ARCH 442.

544 Historic Preservation Economics (3) Developing skills in assessing the economics of preserving historic properties. Emphasizes exercises involving feasibility studies, pro formas, revolving funds, and identification of feasible users. Surveys also Main Street program and heritage tourism and heritage areas as revitalization techniques.
Prerequisite: graduate status in the College of

Architecture and Planning or permission of the program director; ARCH 540.
Not open to students who have credit in ARCH 444 or equivalent.

545 Historic Preservation Design and Graphic Documentation (3) Introduction to graphic techniques, methods, and design processes used in the documentation and recordation of historic properties, with emphasis on manual and computer aided measured drawing and representation, laser technologies, photo documentation, laboratory and field procedures, interpretation of physical conditions, and the design and development of presentation techniques.
Prerequisite: graduate status in the College of Architecture and Planning or permission of the program director.
Not open to students who have credit in ARCH 445 or equivalent.

547 Historic Preservation Technology 1 (3) Survey of the materials and systems of construction used in historic buildings and the causes of deterioration, obsolescence, and failure in buildings. Emphasizes developing diagnostic skills through field investigations and laboratory analysis and exercises.
Prerequisite: graduate status in the College of Architecture and Planning or permission of the program director.
Not open to students who have credit in ARCH 447 or equivalent.

549 Historic Preservation Technology 2 (3) Survey of the methods and philosophies of conservation and rehabilitation for historic buildings. Emphasizes identifying appropriate solutions to problems of deterioration and appropriate rehabilitation and restoration approaches. Field trips and laboratory analysis and projects.
Prerequisite: graduate status in the College of Architecture and Planning or permission of the program director; ARCH 547.
Not open to students who have credit in ARCH 449 or equivalent.

573 Historic Preservation Colloquium (3) Seminar investigates how we have come to understand and value the past, scrutinizing disparate forms of preservation: environmental protection, building restoration, monuments and memorials, and ancestor worship, to foster an understanding of the sociocultural and historical complexities of preservation and concepts of history as they inform contemporary historic preservation work.
Prerequisite: graduate status in the College of Architecture and Planning or permission of the program director.

590 Independent Study (1-6) Approval of the independent study proposal by the faculty advisor and the department chairperson.
Prerequisite: graduate status in the College of

Architecture and Planning or permission of the program director.

A total of 6 hours of credit may be earned.

674 Historic Preservation Proposal (1) Selecting a topic, committee members, and preparing an acceptable proposal for the master's thesis; creative project; research paper; or professional project.

Prerequisite: graduate status in the College of Architecture and Planning or permission of the program director.

696 Historic Preservation Professional Project (3) Historic preservation field project undertaken in conjunction with a practicing professional qualified to advise the student in the selected area of study. The MSHP director or other member of the graduate faculty in consultation with the student will approve the study topic and the professional advisor.

Prerequisite: graduate status in the College of Architecture and Planning or permission of the program director.

Miller College of Business

DEPARTMENT OF INFORMATION SYSTEMS AND OPERATIONS MANAGEMENT

Revised:

MINOR IN OPERATIONS MANAGEMENT, 15 hours

PREFIX	NO	SHORT TITLE	CR HRS
ISOM	300	Project Management	3
	351	Operations Management	3
	355	Quality Management	3
			———
			9 hrs

Two courses from
ISOM	452	Inventory Management (3)	
	453	Manuf Plnnng & Control (3)	
	454	Supply Chain Management (3)	
	459	Curr Topics in Oper Mgt (3)	6
			———
			15 hrs

To pursue this program, students must have sufficient mathematical preparation to meet the prerequisite for ECON 221. The prerequisite for ECON 221 is a *C* or better grade in MATH 111 or the equivalent; sophomore standing; demonstrated proficiency in computer skills. MATH 132 simultaneously substitutes for the University Core Curriculum math requirement. Proficiency in computer skills may be demonstrated by examination, or credit in ISOM 125 or CS 104 or its equivalent. The prerequisite for ISOM 135 is proficiency test required, ISOM 125 or CS 104.

INFORMATION SYSTEMS AND OPERATIONS MANAGEMENT (ISOM)

Dropped:

341 Business and Managerial Communications (3)

Revised:

125 Microcomputer Applications for Business (3) Provides an overview of business operations with special emphasis on management, marketing, operations, human resource management, accounting, and finance. Also provides an introduction to microcomputer applications to business by using Microsoft Office software to analyze and present business data. Basic familiarity with business functions, environments, and financial statements is developed using a common case, and other audio-visual devices. Uses integrated assignments to develop proficiency in applying Microsoft office tools to analyze business problems.

Not open to students who have credit in CS 104.

490 Information Systems Integration Project (3) Requires students to plan, develop, and present a capstone project in information systems. In addition to class meeting time, information systems students will be required to meet in arranged times to complete a capstone project.

Prerequisite: ISOM 300, 317, 412, senior standing.

College of Fine Arts

DEPARTMENT OF THEATRE AND DANCE

Revised:

MAJOR IN THEATRE, BFA, 85 hours

PREFIX	NO	SHORT TITLE	CR HRS
Core requirements, 32 hours			
THEA	102	Computers in Theatre and Dance	3
	103	Aesthetics of Theatre 1	3
	104	Aesthetics of Theatre 2	3
	105	Freshman Experience	0
	107	Design Awareness	3
	220	Stagecraft	3
	232	Acting 1	3
	250	Directing 1	3
	280	Practicum (0-1)	2
	317	Pre-Modern Theatre History	3
	319	Modern Theatre History	3
	405	Senior Experience	0
	435	Shakespeare Performance	3
			———
			32 hrs

Musical theatre option, 53 hours

DANC	110	Intro to Ballet 1	1
	111	Intro to Ballet 2	1
	131	Intro to Jazz 2	1
	132	Intro to Tap 1	1
	230	Jazz 1	2
	232	Tap 1 (1)	1
	280	Musical Theatre Dance 1	2
	281	Musical Theatre Dance 2	2
THEA	229	Stage Makeup	2
	233	Acting 2	3
	270	Basic Musicianship 1	2
	271	Basic Musicianship 2	2
	272	Sight Singing 1	1
	273	Sight Singing 2	1
	274	Musical Theatre Ensemble	1
	318	Advanced Topics	3
	328	Voice Lesson (1-8)	8
	332	Freshman Performance Lab	1
	334	Studio 1	3
	335	Studio 2	3
	371	Singing Actor 1	2
	372	Singing Actor 2	2
	430	Studio 7	3
	433	Studio 10	3

Directed electives, 2 hours from

THEA	434	Immersion Experience (1-12)	
	499	Internships (0-9)	2

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85 hrs

Students are expected to take or place out of THEA 232, 333.

The Musical Theatre BFA program is designed as a pre-professional, conservatory style program within a liberal arts education. This interdisciplinary option requires course work in dance, music, and theatre. Curriculum and performance opportunities are designed to prepare students for careers in musical theatre and/or advanced training at quality graduate schools or conservatories. Musical theatre students are selected for this degree program by audition. In addition, musical theatre students must pass juried semester auditions in acting, dance and singing. All seniors will be expected to enroll in an immersive learning experience as well as audition for showcases. Those seniors not participating in the Chicago, Los Angeles, and/or New York showcases will be required to perform a half hour recital or cabaret. Students failing to pass a jury at the end of each semester are considered to be on probationary status; any student failing a jury or not maintaining the appropriate degree program grade-point average for a second semester will be dropped from the program.

THEATRE (THEA)

Revised:

319 Modern Theatre History (3) Study of theatre since 1700, with emphasis on the material conditions of theatrical production, dramatic/performance theory, and representative dramatic literature.
   Prerequisite: THEA 317, permission of the department chairperson.

334 Studio 1 (3) Building on the alignment and anatomy information introduced in THEA 332, and the movement principles taught in THEA 333, this studio focuses on following physical and emotional impluse and understanding the circles of awareness.
   Prerequisite: THEA 332 or 333; permission of the department chairperson.
   Open only to theatre majors.

College of Sciences and Humanities

DEPARTMENT OF COMPUTER SCIENCE

COMPUTER SCIENCE (CS)

Revised:

222 Advanced Programming (3) Project-intensive study of advanced topics and best practices in software development, including advanced language features, modular decomposition, and development tools.
   Prerequisite: CS 121, 124, both with *C-* or better, ENG 103 or equivalent.

249 Forensics (3) Introduction to digital forensics as applied to gathering evidence of inappropriate behavior on a computer. Includes an examination of prominent file system architectures and search algorithm techniques, physical characteristics of magnetic media, secure deletion methodologies, and cryptology.
   Prerequisite: CS 203.

310 Web Programming (3) Advanced HTML, including XHTML, Cascading Style Sheets, Java Script and Dynamic HTML. XML including DTDs and XSL. Server side programming, security issues, and encryption-based security mechanisms.
   Prerequisite: CS 121.

327 Distributed Processing and Networks (3) The hardware and software of computer networks and distributed processing. Develops the important design parameters and a general design methodology.
   Prerequisite: CS 324.

347 Network Security (3) Topics include encryption, decryption, protocols, viruses, network security,

authentication, legal and ethical issues, and security in operating systems, databases, e-commerce, Internet, wireless. Algorithms, protocols and applications such as RSA, DES, SSL, Firewalls, Digital Signatures, VPNs and emerging topics will be explored.

Prerequisite: CS 327, 376.

495 Software Engineering 1 (3) Introduction to software engineering: process, requirements, design, quality assurance, project management, and tools. Capstone project for the computer science major. Teams work on year-long immersive projects and perform all software development tasks in cooperation with a client partner. To be taken in the last full academic year before graduation.

Prerequisite: CS 222: COMM 210: and permission of the department chairperson.

515 Game Programming (3) An introduction to game programming. Topics include active and passive rendering, sprite animation, collision detection, audio playback, input devices, deployment, and applications of artificial intelligence. Before enrolling, a student is expected to have taken CS 524 or the equivalent of two semesters of programming and an algorithms course.

Not open to students who have credit in CS 315.

527 Internetworking (3) The hardware and software of computer networks and distributed processing. Develops the important design parameters and a general design methodology. Before enrolling, a student is expected to have taken CS 524 or the equivalent of two semesters of programming and an algorithms course.

Not open to students who have credit in CS 327.

530 System Programming (3) Considers the computer system from the points of view of its architecture, operating system, and applications. Topics include processor organization, peripheral devices, I/O programming, system programs, monitor services, file organization, and real-time applications. Before enrolling, a student is expected to have completed the equivalent of an undergraduate computer architecture course.

Not open to students who have credit in CS 430.

535 Programming Languages (3) Study of principles of programming languages. Emphasizes language paradigms and important features, structures, characteristics, and formal syntax of modern high-level programming languages. Examples of languages in each paradigm will be studied. Hours do not apply to master's degree in computer science. Before enrolling, a student is expected to have completed the equivalent of an undergraduate computer architecture course.

Not open to students who have credit in CS 335.

536 Database Design (3) An introduction to database design, including physical representation, modeling, database systems, and implementation. Before enrolling, a student is expected to have taken CS 524 or the equivalent of two semesters of programming and an algorithms course.

Not open to students who have credit in CS 436.

538 Computer Graphics (3) Methods of developing, modifying, and rendering graphics displays. Emphasizes the design and writing of graphics software for both two- and three-dimensional displays. Knowledge of a structured high-level language is required. Before enrolling, a student is expected to have taken CS 524 or the equivalent of two semesters of programming and an algorithms course.

Not open to students who have credit in CS 438.

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

545 Human-Computer Interaction (3) Investigation into the principles and practice of user interface design, evaluation, and implementation. Topics include user-centered design, graphical user interface programming, evaluation methods, and software architectures. Before enrolling, a student is expected to have taken CS 524 or the equivalent of two semesters of programming and an algorithms course.

Not open to students who have credit in CS 345.

547 Computer, Information, and Network Security (3) Topics include encryption, decryption, protocols, viruses, network security, authentication, legal and ethical issues, and security in operating systems, databases, e-commerce, Internet, wireless. Algorithms, protocols, applications such as RSA, DES, SSL, Firewalls, Digital Signatures, and VPNs, and emerging topics will be explored. Before enrolling in this course, a student is expected to take CS 527 or a similar undergraduate networking course and CS 576 or a similar operating systems course.

Not open to students who have credit in CS 347.

557 Applied Cryptography (3) Introduction of basic principles and application of cryptography. Topics include encryption, decryption, private and public key systems, and their mathematical foundation: divisibility and Euclidean algorithms, arithmetic of congruences, and large prime numbers. Projects are implementations of related algorithms. LISP and JAVA are recommended languages. Before enrolling, a student is expected to have taken CS 524 or the equivalent of two semesters of programming and an algorithms course.

Not open to students who have credit in CS 457.

570 Theory of Computation 1 (3) Mathematical logic; alphabets and languages; finite automata, regular and nonregular languages, and Kleene's theorem; regular grammars; pushdown automata and context-free grammars; Turing and Post machines; recursive and recursively enumerable languages; the Chomsky Hierarchy. Hours do not apply to master's degree in computer science. Before enrolling, a student is expected to have taken CS 524 or an undergraduate algorithms course.

Not open to students who have credit in CS 470.

576 Operating Systems (3) Investigate the functions and structure of computer operating systems, processors, and memory. Topics include process control, concurrency, scheduling, security, and file systems. Introduces topics in

systems programming, including I/O programming, signals, and IPC. Before enrolling, students should have completed the equivalent of an undergraduate computer architecture course and CS 524 or an undergraduate algorithms course.
Not open to students who have credit in CS 376.

597 Multitier Web Architectures (3) Topics include n-tier architectures, data access, and application logic layers, Web services, scalability, advanced XML, service-oriented architectures, object access protocols, and Web site administration and security. Projects will be used to reinforce concepts. Before enrolling, a student is expected to have taken CS 524 or an undergraduate algorithms course.
Not open to students who have credit in CS 397.

636 Advanced Database Systems (3) Topics include knowledge representation and ontology concepts, object database concepts, database security and authorization, distributed databases, client-server architectures, Internet databases, and emerging database technologies and applications. Programming of both database techniques and application servers is based on current technologies such as ORACLE. Before enrolling, students should have taken CS 536 or a similar undergraduate database course.

638 Advanced Topics in Computer Graphics (3) Topics will be chosen from current research areas in computer graphics and from advanced topics in classical computer graphics. Possible topics include fractals, ray tracing, animation techniques, and geometric modeling. Before enrolling, students are expected to have taken CS 538 or a similar undergraduate computer graphics course.

639 Seminar in Computer Science (3) Readings and conferences assigned in some particular problem or group of problems in computer science.

642 Simulation Techniques (3) An introduction to the principles and applications of simulation. Use of higher-level languages and simulation languages as applied to system studies. Use of examples from different subjects to carry out simulation. Before enrolling, a student is expected to have taken two semesters of undergraduate programming and a statistics course.

665 Applied Computational Geometry (3) Topics such as algorithms for polygon triangulation, polygon partitioning and their applications, convex hulls in two and three dimensions and their applications, Voronoi diagrams and their applications, search and intersection algorithms, robot motion planning, and implementation of algorithms. Before enrolling, a student is expected to have taken an algorithms course.

668 Graphs, Algorithms, and Applications (3) Concepts of graph theory. Algorithms for graph traversal, shortest paths, connectivity, spanning trees, and matchings. Applications of graphs to computer programming, software engineering, VLSI design, networks and flows, and parallel programming. Before enrolling, a student is expected to have taken CS 524 or an

undergraduate algorithms course.

670 Theory of Computation 2 (3) Computability and decidability; introduction to the theory of computational complexity; the classes sP and NP; NP-completeness; examples of some NP-complete problems; nondeterminism and parallel computation; proving the correctness of programs. Before enrolling, a student is expected to have taken CS 570 or an undergraduate theory of computation course.

675 Model Checking (3) Overview of formal verification techniques in software engineering; system modeling with automata; temporal logics; algorithms and techniques of model checking to critical systems in industry. Before enrolling in this course, students should have taken CS 524 or an undergraduate algorithms course and an undergraduate programming languages course.

678 Compiler Construction (3) Review of context-free grammars and basic parsing concept, compiler organization, and construction of components for a compiler. Before enrolling, a student is expected to have taken CS 570 or an undergraduate theory of computation course.

699 Reading and Honors (3) Special advanced work not offered in other courses. Requirements include a final written report and a presentation in the departmental colloquium series.
Prerequisite: permission of the department chairperson.
A total of 6 hours of credit may be earned, but no more than 3 in any one semester or term.
A total of 12 hours of combined CS 539, 639, and 699 credit may be earned.

DEPARTMENT OF ENGLISH

ENGLISH (ENG)

Revised:

210 Introduction to Rhetoric and Writing (3) Introduction to the field of Rhetoric and Writing studies. Readings and written work emphasize the diversity and scope of the field.
Prerequisite: ENG 104 or equivalent.

302 Developing Elementary English Language Arts with Multicultural Literature (3) Focuses on the development of reading, writing, listening, speaking, viewing, and visual representing using multicultural literature. Includes clinical experiences.
Prerequisite: C or better in ENG 204.
Open only to elementary education majors.

303 History of Rhetoric (3) Beginning with ancient rhetoric and focusing on major historical periods, surveys the historical development of rhetoric, emphasizing the cultural context of ideas, and the construction of rhetorical "traditions."
Prerequisite: ENG 104 or equivalent.

304 Teaching Writing in the Elementary Grades (3)
Focuses on theory, research methods, strategies, and program models for teaching writing in the elementary classroom; includes clinical experiences that develop reading/writing connections.
Prerequisite: C or better in ENG 204.
Open only to elementary education majors.

311 Language Arts Methods (3) Modern methods and materials for teaching written and oral expression, language use, spelling, handwriting, and literature in the elementary grades. Cannot be counted as an elective in major or minor programs in English.
Prerequisite: C or better in ENG 204.

401 Trends and Issues in Teaching Elementary English Language Arts (3) Requires students to investigate in-depth a problem or issue related to the teaching of elementary English Language Arts reflecting on best practices vs. common practices in relation to the NCTE/IRA Standards for the English Language Arts.
Prerequisite: C or better in ENG 204.
Parallel: ENG 311.
Open only to elementary education majors.

436 Theory and Research in Teaching English to Speakers of Other Languages (3) Psychological and linguistic bases of language learning and recent theories concerning the application of linguistic science to methodology and materials in second-language teaching.
Prerequisite: ENG 220, 321; or permission of the department chairperson.

437 Methods and Materials in Teaching English to Speakers of Other Languages (3) Study and practice of a variety of methods in teaching English as a second or foreign language. Discussion of pedagogical issues in language teaching.
Prerequisite: ENG 220, 321; or permission of the department chairperson.

438 TESOL Curriculum Development and Assessment (3) Focuses on curriculum development and assessment and the use of materials to meet the specific needs of English language learners at various levels of proficiency.
Prerequisite or parallel: ENG 220, 321; or permission of the department chairperson.

DEPARTMENT OF HISTORY

HISTORY (HIST)

Dropped:

101 Introduction to American Studies (3)

SOCIAL STUDIES (SS)

Dropped:

670 Applying Media Resources to Social Science Education (3)

688 Using Community Resources in Teaching Social Studies (3)

690 Selection and Organization of Social Studies Teaching Materials (3)

694 Seminar in Social Studies Curriculum and Instruction (1-5)

695 Recent Trends in Teaching Secondary School Social Studies (3)

697 Seminar in Social Science Education (1-5)

DEPARTMENT OF PHYSIOLOGY AND HEALTH SCIENCE

HEALTH SCIENCE (HSC)

Correction:

Reinstate the following course:

683 Principles of Epidemiology (3) Introduction to the epidemiological perspective on health and disease. Emphasizes the principles and methods used to describe and evaluate the patterns of contemporary health problems in communities and population subgroups. Methods and research designs used in the investigation of the etiological causes of disease are presented.

Ron Murphy, Associate Director
Office of Academic Systems