470: Personnel Management. 0-3-3. Personnel principles as applied to industrial production with emphasis on manufacturing strategy, just in time, quality control, scheduling, plant layout, and supplier relations. (G)

475: Industrial Management. 0-3-3. Preq., MGMT 333. Management principles as applied to industrial production with emphasis on manufacturing strategy, just in time, quality control, scheduling, plant layout, and supplier relations. (G)

476: Systems and Operations Management. 0-3-3. Preq., MGMT 333. Advanced studies and problems in the planning, management, and control of industrial operations. Scheduling, capacity, and shop floor control are emphasized. (G)

477: Supply Chain Management. 0-3-3. Preq., MGMT 333. The management of the supply chain from product/process design, procurement, and manufacturing to final delivery to the consumer using the SAP information system.

478: Seminar in Personnel and Industrial Relations. 0-3-3. Preq., MGMT 470. Readings, problems and cases in human resource management. Analysis of current problems and future prospects are emphasized. (G)

485: International Business Management. 0-3-3. Preq., MGMT 310. Readings and cases in international business: governmental activities, regionalism, market opportunities, structure of international companies, company intelligence, human relations, operating policies, procedures and problems. (G)

510: Contemporary Management. 0-3-3. An analysis of management principles, functions, and practices with a particular emphasis on the analysis of contemporary management issues and problems.

537: Human Resources Management. 0-3-3. Preq., MGMT 510 or consent of instructor. An advanced course in human resource management with an emphasis on personnel functions, within the context of the strategy, structure, and environment of contemporary organizations.

539: Organization Theory. 0-3-3. Preq., MGMT 510 or consent of instructor. A macro approach to the study of complex organization emphasizing current research findings.

544: Advanced Production and Operations Management. 0-3-3. Preq., MGMT 510 or consent of instructor. An in-depth analysis of production/operations concepts, methods, and techniques from a systems perspective.

547: Seminar in Industrial Relations. 0-3-3. Preq., MGMT 510 or consent of instructor. An in-depth study of current issues in the area of labor-management relations.

550: Directed Study in Management. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of management.

560: Materials Management. 0-3-3. Preq., MGMT 510 or consent of instructor. Basic concepts of the materials management function including quality management, MRP II, scheduling, inventory management, purchasing, materials handling, JIT, and manufacturing strategy.

571: Organizational Behavior. 0-3-3. Preq., MGMT 510 or consent of instructor. A seminar with emphasis on theories and concepts of the behavioral sciences relevant to the internal operations of the organization.

580: Seminar in Venture Assessment and Management. 0-3-3. Preq., MGMT 510 or consent of instructor. An in-depth seminar applying the tools of analysis from functional business areas to the problems of proposed and existing firms utilizing actual cases.

595: Administrative Policy. 0-3-3. Preq., ACCT 505, CIS 510, ECON 510, FINC 515, MGMT 510, MKTG 530, QA 525. A synthesis of the material covered in the courses required for the MBA. Specific problems and cases are used to develop executive decision-making.


602: Research Methods II. 0-3-3. Preq., QA 610 and MGMT 601 or MKTG 601. A course designed to introduce the student to the collection, analysis, and interpretation of survey research data with an emphasis on the application of multivariate statistical techniques.

610: Current Research Issues in Management. 0-3-3. A seminar emphasizing the nature of theory and theory development and the analysis of current theoretical and empirical literature within the field of management.

615: Seminar in Behavioral Research Methodology. 0-3-3. May repeat one time for credit. Analysis and intensive study of research and research
methodology utilized in the behavioral sciences. The method of science as applied to management is emphasized.

620: Doctoral Seminar in Research. 0-3-3 (6). May be repeated one time for credit. Research on individual topics. Should be taken near completion of course work.

629: Organization Theory. 0-3-3. Preq., MGMT 510 or consent of instructor. Requires Doctoral standing. May require additional class meetings. A macro approach to the study of complex organization emphasizing current research findings. Credit will not be given for MGMT 629 if credit is given for MGMT 539.

637: Human Resources Management. 0-3-3. Preq., MGMT 510 or consent of instructor. Requires Doctoral standing. May require additional class meetings. An advanced course in human resource management with an emphasis on personnel functions, within the context of the strategy, structure, and environment of contemporary organizations. Credit will not be given for MGMT 637 if credit is given for MGMT 537.

639: Seminar in Strategy & Organizational Theory. 0-3-3. Preq., MGMT 510 or consent of instructor. A doctoral seminar focusing on strategy and organization theory with emphasis on theoretical and empirical research and its application.

644: Advanced Production and Operations Management. 0-3-3. Preq., MGMT 510 or consent of instructor. Requires Doctoral standing. May require additional class meetings. An in-depth analysis of production/operations concepts, methods, and techniques from a systems perspective. Credit will not be given for MGMT 644 if credit is given for MGMT 544.

645: Evolution of Management Thought. 0-3-3. Preq., MGMT 510 or consent of instructor. Seminar with emphasis on important contributions to modern management thought as evidenced in the writings of major contributors.

647: Seminar in Industrial Relations. 0-3-3. Preq., MGMT 510 or consent of instructor. Requires Doctoral standing. May require additional class meetings. An in-depth study of current issues in the area of labor-management relations. Credit will not be given for MGMT 647 if credit is given for MGMT 547.

650: Directed Study in Management. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of management.

660: Materials Management. 0-3-3. Preq., MGMT 510 or consent of instructor. Requires Doctoral standing. May require additional class meetings. An in-depth study of current issues in the materials management function including quality management, MRP II, scheduling, inventory management, purchasing, materials handling, JIT, and manufacturing strategy. Credit will not be given for MGMT 660 if credit is given for MGMT 560.

671: Organizational Behavior. 0-3-3. Preq., MGMT 510 or consent of instructor. Requires Doctoral standing. May require additional class meetings. A seminar with emphasis on theories and concepts of the behavioral sciences relevant to the internal operations of the organization. Credit will not be given for MGMT 671 if credit is given for MGMT 571.

680: Seminar in Venture Assessment and Management. 0-3-3. Preq., MGMT 510 or consent of instructor. Requires Doctoral standing. May require additional class meetings. An in-depth seminar applying the tools of analysis from functional business areas to the problems of proposed and existing firms utilizing actual cases. Credit will not be given for MGMT 680 if credit is given for MGMT 580.

685: Comprehensive Exam in Management. No credit. Doctoral standing required. Required for all business administration doctoral students seeking to take the comprehensive exam in management. Successful completion is a prerequisite to the oral comprehensive exam for those seeking a primary field or examined minor in management. Requires consent of graduate director.

MARKETING (MKTG)

300: Marketing Principles and Policies. 0-3-3. Preq., ECON 202 or 215 and junior standing. Marketing functions; institutions; policies and strategies with their business, economic, and social implications.

307: Salesmanship. 0-3-3. Preq., junior standing. A study of the selling process with emphasis on the economic aspects of salesmanship and the role of the salesmen in buyer-seller relationships.

320: Consumer Behavior. 0-3-3. Preq., junior standing. A study of the consumer and the relation to the marketing process.

401: Internship in Marketing I. 3 hours credit. (Pass/Fail) Preq., consent of instructor and senior standing. On site, supervised, structured work experiences in the field of business.

402: Internship in Marketing II. 3 hours credit. (Pass/Fail) Preq., consent of instructor and senior standing. On site, supervised, structured work experiences in the field of business.

420: Business Advertising. 0-3-3. Preq., MKTG 300. A study of the analysis of principles of successful advertising enabling the student to appraise their effectiveness as marketing tools and their social and economic significance. (G)

425: Sales Management. 0-3-3. Preq., MKTG 307 or consent of instructor. Relation of sales department to other departments; types of sales organizations, management of sales force; market analysis; price policies, sales budgets; distribution costs.

435: Retailing Management. 0-3-3. Preq., MKTG 300 and senior standing. Merchandise distribution by retail organization; emphasis on retailing in the distributive system and problems of management and control. (G)

473: Marketing Administration. 0-3-3. Preq., MKTG 320, 420, or 435, or consent. An in-depth analysis and use of marketing principles to construct marketing plans and decisions utilizing current studies, readings, and simulations.

482: Marketing Research. 0-3-3. Preq., QA 233. A consideration of marketing research as a management tool; application of research techniques to various marketing problems. (G)

485: International Marketing. 0-3-3. Preq., MKTG 300 or consent of instructor. International marketing opportunities and principles; marketing tools as a means of adapting the individual domestic business firm and its marketing methods to the international environment. (G)

530: Marketing Management. 0-3-3. A course to introduce the student to the role of the marketing manager in the development and implementation of strategies in the areas of products, pricing, channels, and promotion.

533: Advanced Marketing Research. 0-3-3. Preq., MKTG 530 or consent of instructor. An in-depth study of research philosophy, theory, objectives, techniques, and problems as applied to marketing.

537: Seminar in Buyer Behavior. 0-3-3. Preq., MKTG 530 or consent of instructor. An in-depth examination of the conceptual and theoretical foundations of consumer and industrial buyer behavior.

550: Directed Study in Marketing. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of marketing.

600: Survey of Marketing. 0-3-3. Preq., MKTG 530 or consent of instructor. A survey of the marketing literature examining theoretical and empirical research including promotion, buyer behavior, distribution, ethics, global marketing, pricing, product development, and marketing strategy.

601: Research Methods I. 0-3-3. Preq., QA 605. An in-depth study of principles, theories, objectives, techniques, and problems as applied in the design and analysis of research studies.

602: Research Methods II. 0-3-3. Preq., QA 610 and MKTG 601 or MKTG 601. A course designed to introduce the student to the collection, analysis, and interpretation of survey research data with an emphasis on the application of multivariate statistical techniques.

610: Seminar in Marketing Management. 0-3-3. Preq., MKTG 530 or equivalent. A survey of two of the four elements of the marketing mix (place, price, product, and promotion). An emphasis is placed on major topics of managerial and research interest.

615: Seminar in Marketing. 0-3-3 (6). May be repeated one time for credit. An examination of concepts and research findings related to selected topics in marketing. Presentation and critical evaluation of reports from related disciplines.

620: Advanced Topics in Marketing Management. 0-3-3. Preq., MKTG 530 or equivalent. A survey of two of the four elements of the marketing mix (place, price, product, and promotion). An emphasis is placed on major topics of managerial and research interest.

637: Seminar in Buyer Behavior. 0-3-3. Preq., MKTG 530 or consent of instructor. Requires Doctoral standing. May require additional class meetings. An in-depth examination of the conceptual and theoretical foundations of consumer and industrial buyer behavior. Credit will not be given for MKTG 637 if credit is given for MKTG 537.

640: Marketing Theory. 0-3-3. Preq., MKTG 530 or equivalent. A survey of the philosophy of science and the evolution of marketing ideas, concepts, and theories. The influence and contribution of individuals to marketing concepts are emphasized.

*This course will be accepted for general education transfer credit. A course MAY or MAY NOT be accepted as equivalent to or substitute for a course in a specific discipline or major. Please check the Board of Regents Web site at [http://www.regents.state.la.us/](http://www.regents.state.la.us/) and the school you are transferring to for additional information.
650: Directed Study in Marketing. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of marketing.

685: Comprehensive Exam in Marketing. No credit. Doctoral standing required. Required for all business administration doctoral students seeking to take the comprehensive exam in marketing. Successful completion is a prerequisite to the oral comprehensive exam for those seeking a primary field or examined minor in marketing. Requires consent of graduate director.

**MATH100B:** College Algebra. 0-5-5. Preq., Mathematics ACT score between 18 and 21 inclusive, or Mathematics SAT score between 430 and 510 inclusive, or Placement by Exam to bypass MATH 099, or successful completion of MATH 099. MATH 100B-C covers the same material as MATH 101 and includes additional supplementary review material. Credit will not be given for MATH 100B-C if credit is given for MATH 101. Statewide Transfer Agreement Course*.

**MATH100C:** 0-3-3. Radical expressions; rational exponents; complex numbers; quadratic, absolute value, rational equations; systems of linear equations; inequalities; functions; conics; graphs; inverse, exponential, logarithmic functions; applications. Concurrent enrollment in the corresponding section of MATH 100B is required. Statewide Transfer Agreement Course*.

**MATH100B:** 2-0-2. (Pass/Fail) Supplementary review material including rational exponents, integer exponents, multiplying polynomials, factoring, rational expressions. Concurrent enrollment in the corresponding section of MATH 100C is required. A grade of S will be assigned in MATH 100B if and only if the student earns a minimum grade of D in MATH 100C. A student who drops MATH 100C and wishes to continue attending class to be better prepared for repeating MATH 100B-C may remain enrolled in MATH 100B for the remainder of the quarter. Such a student who does continue to attend class will be assigned a grade of NC in MATH100B. Statewide Transfer Agreement Course*.

**MATH101:** 0-3-3. Preq., Mathematics ACT score greater than or equal to 22, or Mathematics SAT score greater than or equal to 520. Radical expressions; rational exponents; complex numbers; quadratic, absolute value, rational equations; systems of linear equations; inequalities; functions; conics; graphs; inverse, exponential, logarithmic functions; applications. Credit will not be given for both MATH 100 and MATH 101. Statewide Transfer Agreement Course*.

**MATH112:** 0-3-3. Preq., Mathematics ACT score greater than or equal to 22, or Mathematics SAT score greater than or equal to 590, or Placement by Exam or MATH 101. Solution of right triangles, reduction formulas, functions of multiple angles, trigonometric equations, inverse functions, and complex numbers. Credit will not be given for MATH 112 if credit is given for MATH 212. Statewide Transfer Agreement Course*.

**Plane Geometry.** 0-3-3. Preq., MATH 240. A course in plane Euclidean geometry for a student who is planning to teach high school geometry.

**Algebra for Management and Social Sciences.** 0-3-3. Preq., Mathematics ACT score greater than or equal to 26, or Mathematics SAT score greater than or equal to 590, or Placement by Exam or MATH 101. Linear and quadratic equations and functions, graphs, matrices, systems of linear equations, mathematics of finance, sets, probability and statistics, exponential and logarithmic functions.

**Introduction to Number Structure.** 0-3-3. Preq., MATH 101; Elementary Education majors only. Developing number sense and concepts underlying computation, estimation, pattern recognition, and function definition. Studying number relationships, systems, and theory. Applying algebraic concepts to solve problems.

**Conceptual Geometry and Quantitative Analysis.** 0-3-3. Preq., MATH 205; Elementary Education majors only. Studying the geometry of one, two, and three dimensions and applications to problems in the physical world. Exploring probability and statistics in real-world situations.

**Applied Technical Mathematics with Calculus.** 0-3-3. Preq., Mathematics ACT score greater than or equal to 26, or Mathematics SAT score is greater than or equal to 590, or Placement by Exam, or MATH 101. Applied trigonometry, vectors, basic applied differential and integral calculus for professional aviation. Credit will not be given for MATH 212 if credit is given for MATH 112.

**Applied Calculus.** 0-3-3. Preq., MATH 101 and MATH 112 or Placement by Exam. Functions and graphs, the derivative, applications of derivatives, indefinite integrals, application of definite integrals. Credit will not be given for MATH 220 if credit is given for MATH 222 or 240 or 241 or 242.

**Calculus for Business Administration and Economics.** 0-3-3. Preq., MATH 125 or MATH 240, or placement by exam. Functions and graphs, the derivative, the indefinite integral and the definite integral; applications as applied to business and economics. Credit will not be given for MATH 222 if credit is given for MATH 220 or 241 or 242. Statewide Transfer Agreement Course*.

**Applied Calculus for Electrical Technology.** 0-3-3. Preq., MATH 220. Applications of calculus and differential equations to electrical technology; includes integration techniques, series, differential equations, and transforms.

**Mathematics for Engineering & Science I.** 2-3-3. Preq., one of (A) or (B): (A) High school trigonometry or MATH 112 and one of the following: Mathematics ACT score of 26 or better, or Mathematics SAT score of 590 or better, or MATH 101, or (B) MATH 100 and 112. Functions, graphs, polynomial functions; trigonometric functions, exponential and logarithmic functions and equations; inverse functions; introduction to analytic geometry; limits; derivatives, continuity. Credit will not be given for MATH 220 if credit is given for MATH 222.

**Mathematics for Engineering & Science II.** 0-3-3. Preq., MATH 240. Differentiation rules; trigonometric reduction formulas, trigonometric equations, derivatives of algebraic, exponential, logarithmic, and trigonometric functions; application of differentiation; optimization. Credit will not be given for MATH 241 if credit is given for MATH 220 or 222.

**Mathematics for Engineering & Science III.** 0-3-3. Preq., MATH 241. Anti-differentiation, definite integrals, techniques of integration, areas and volumes, separable differential equations and linear constant coefficient differential equations (homogeneous and inhomogeneous). Credit will not be given for MATH 242 if credit is given for MATH 220 or 242.


**Mathematics for Engineering & Science V.** 0-3-3. Preq., MATH 243. Triple integrals, space curves, differentiation of functions of several variables, vector calculus, Green’s and Stokes’ theorem.

**Mathematics for Engineering & Science VI.** 0-3-3. Preq., MATH 244. Infinite sequences, power series, Taylor series, elementary partial differential equations; use of series to solve differential equations, LaPlace transforms.


**Introduction to Linear Algebra.** 0-3-3. Preq., MATH 244. Matrices, systems of linear equations, vectors, vector spaces, linear transformations, eigenvalues and eigenvectors.


**Discrete Mathematics II.** 0-3-3. Preq., MATH 311. Binomial and Multinomial Theorems, principle of inclusion-exclusion, recurrence relations, directed graphs, network flows, and selected topics.

**Introductory Numerical Analysis.** 0-3-3. Preq. MATH 243 and knowledge of FORTRAN. Introduction to numerical techniques in finding roots of equations, solving systems of equations, approximating functions, derivatives and integrals.

**Introduction to Abstract Algebra.** 0-3-3. Preq., MATH 307. Fundamental set concepts, groups, rings, integer domains, fields, polynomials.

**Introduction to Real Analysis.** 0-3-3. Preq., MATH 244 and MATH 311 or 307. A rigorous introduction to the calculus of functions of one real variable.

**College Geometry.** 0-3-3. Preq., MATH 113 or equivalent, and MATH 243. Logical systems and basic laws of reasoning, axiomatic geometry.
geometric transformations, selected Euclidean geometry, non-Euclidean and projective geometries. (G)

405: Linear Algebra. 0-3-3. Preq., MATH 308. Study of linear systems, matrices, and algebra of matrices, determinants, vector spaces and subspaces, linear transformations and representations by matrices. (G)

407: Partial Differential Equations. 0-3-3. Preq., MATH 245. Solution of linear first order equations. Formation and solution of second order problems of parabolic, elliptic, and hyperbolic type. (G)


411: Advanced Engineering Mathematics. 0-3-3. Preq., MATH 244. Vectors, vector spaces and linear transformations, applications of matrices, vector analysis, calculus of variations. (G)

412: Vector and Tensor Analysis. 0-3-3. Preq., MATH 411. The algebra of vectors, differential vector calculus, differential geometry, integration, static and dynamic electricity, mechanics, hydrodynamics, and electricity, tensor analysis and Riemann geometry, further applications of tensor analysis. (G)


416: Abstract Algebra. 0-3-3. Preq., MATH 318. Number theory, equivalences, and congruences, groups, ideals. (G)

430: Projective Geometry. 0-3-3. Preq., MATH 244 and 308., Ideal elements, duality, harmonic sets, projectivity, projective theory of conics, theory of poles and polars. (G)

440: Linear Programming. 0-3-3. Preq., MATH 241 and 308. Characteristics of linear programming problems, properties of linear programming solutions, the simplex method with variations, optimality analysis, the dual problem, the transportation problem. (G)

441: Non-linear Programming. 0-3-3. Preq., MATH 440. Advanced topics in linear programming, quadratic programming, dynamic programming. (G)

445: Theory of Functions of Complex Variables. 0-3-3. Preq., MATH 244. Complex numbers, analytic functions, elementary functions, mapping elementary functions, integrals, power series, residues, poles, conformal mappings, applications of conformal mappings. (G)

450: Ordinary Differential Equations. 0-3-3. Preq., MATH 245 and 340. First-order equations, second-order linear equations, general linear equations and systems, existence and uniqueness theorems, plane autonomous systems. (G)

460: Number Theory. 0-3-3. Preq., MATH 318. Divisibility properties of integers, prime numbers, congruences, number theoretic functions. (G)

470: Introduction to Topology. 0-3-3. Preq., MATH 244., Introduction of concepts, metric spaces, countability axioms, separation axioms, connectedness, compactness, product spaces, continuous mappings and homeomorphisms, homotopy, quotient spaces. (G)


490: Topics in Mathematics. 0-3-3 (6). Various topics in the field of Mathematics. May be repeated for credit. (G)


545: Complex Analysis. 0-3-3. Preq., MATH 445. Rigorous development of limits, continuity, analyticity, sequences, uniform convergence, power series, exponential and trigonometric functions, conformality, linear transformations, conformal mapping and elementary Riemann surfaces.

551: Research and Thesis in Mathematics. 3 credit hours (6). Registration in any quarter may be for three semester hours credit or multiples thereof. Maximum credit allowed is six semester hours.

555: Practicum. 0-3-3 (3). (Pass/Fail) Preq., 12 semester hours of graduate work. Solution of a problem in mathematics; appropriate literature survey; development of mathematical research techniques. Maximum credit allowed is 3 hours.


575: Numerical Solution for PDE II. 0-3-3. Preq., MATH 407, 414, 574. Finite difference schemes for elliptic PDEs, iterative methods, and introduction to finite element methods and multigrid methods.


580: Mathematical Analysis. 0-3-3. Preq., MATH 480. Real number system, measures with emphasis on Lebesque measure, abstract integration with emphasis on the Lebesque integral.

584: Topics in Algebra. 0-3-3 (15). May be repeated for 3 hours credit each time.

586: Topics in Analysis. 0-3-3 (15). May be repeated for 3 hours credit each time.

587: Topics in Applied Mathematics. 0-3-3 (15). May be repeated for 3 hours credit each time.

588: Topics in Topology. 0-3-3 (15). May be repeated for 3 hours credit each time.

599: Graduate Training Seminar. 1-4 hours credit (15). Preq., Consent of instructor. Guided and/or directed study, readings, discussion, observation, and training in the teaching of college mathematics. (Pass/Fail)

655: Mathematical Modeling. 0-3-3. Preq., MATH 245 and STAT 620., Building deterministic and probabilistic models; applications from physical and life sciences. Transient and stationary models, stability, and optimal solutions. Model validation: acceptance, improvement, or rejection.

MECHANICAL ENGINEERING (MEEN)

215: Engineering Materials Laboratory. 3-0-1. Coreq., MEMT 201. A laboratory course studying the experimental behavior of engineering materials. Labs will include hardness testing, impact testing, tensile testing, and heat treating of materials.


351: Computer-Aided Modeling. 3-1-2. Preq., MATH 244. Construction of virtual systems models using constructive solid geometry, swept volumes and trimmed parametric surfaces with engineering applications.


361: Advanced Mechanics of Materials. 0-3-3. Preq., MEMT 211, 312. Theories of stress and strain, failure criteria, energy methods, design for static strength, design for fatigue strength.

363: Dynamics of Machine Elements. 0-3-3. Preq., MATH 312. Kinematics and kinetics of machine elements such as linkages, cams, and gear trains.


382: Basic Measurements. 3-1-2. Preq., ENGR 221. Techniques and instruments for making and analyzing measurements in engineering.

400: Mechanical Engineering Seminar. 3-0-1. Preq., Senior standing. Professionalism, ethics, and service for mechanical engineers.


431: Energy Conversion Systems. 0-3-3. Analysis and design of energy conversion systems. Emphasis on steam turbines and gas turbine electrical power plants. Introduction to emerging energy conversion technologies.

434: Cryogenic Systems. 0-3-3. Preq., MEEN 334 or equivalent. Analysis and design of systems which produce, maintain, or utilize low temperatures; liquefaction systems; refrigeration systems; separation and purification systems; storage systems. (G)


436: Air Conditioning and Refrigeration. 0-3-3. Preq., MEEN 334 and 353. Analysis and design of heating, ventilating and air conditioning systems for residential, commercial, and industrial applications. (G)

438: Advanced Fluid Mechanics. 3-2-3. Preq., MEMT 313 and MATH 245. Principles of viscous fluid flow including dimensional analysis and similarity, duct flow, boundary layer theory, turbomachinery, flow measurement and control and design of fluid systems. (G)

448: Gas Dynamics. 0-3-3. Preq., MEEN 334 and MATH 245. Study of the fundamental laws applied to compressible fluid flow. Isentropic flow, normal and oblique shocks, Prandtl-Meyer, Fanno, Rayleigh flow and supersonic design. (G)

449: Introduction to Computational Fluid Dynamics. 0-3-3. The fundamentals of computational fluid dynamics (CFD); review of numerical methods and fluid mechanics; application of numerical techniques for solution of sample fluid dynamics problems.

450: Special Problems. 1-4 hours credit. Preq., senior standing and consent of instructor. Topics selected will vary from term to term for the purpose of covering selected topics of current importance or special interest.


469: Prevention of Mechanical Failure. 0-3-3. Preq., MEEN 361. Analysis, prediction and prevention of failures in a structure or machine part during the design phase. (G)

476: Rheometry. 4-2-3. Preq., MEEN 292, MATH 245 or equivalent. A study of the interface between controllers and physical systems; principles of electromechanical design, digital and analog circuitry, actuation, sensing, embedded control, and real-time programming. (G)


Methods of determining system stability. Typical mechanical control elements and their transfer functions.

477: Mechanical Vibrations. 3-2-3. Preq., MEEN 292. Introduction to free and forced linear vibration of discrete and continuous mechanical systems. Analysis of translational and rotational systems using analytical and numerical methods.

478: Engineering Acoustics. 0-3-3. Preq., MATH 245. Analysis and design of systems for noise control, including vibration isolation, silencers, room acoustic treatment and acoustic barriers. (G)

480: Capstone Design Project I. 3-0-1. Preq., MEEN 215, 321, 451, 465, ENGL 463, and INEN 300. Open-ended, team-based engineering design project that draws on the student’s entire academic experience with emphasis on idea generation and conceptual design.

481: Capstone Design Project II. 3-0-1. Preq., MEEN 480. A continuation of MEEN 480 project with emphasis on detailed system design.

482: Capstone Design Project III. 3-0-1. Preq., MEEN 481. A continuation of MEEN 481 project with an emphasis on prototype construction and testing.

486: Mechanical Engineering Laboratory. 3-0-1. Preq., ENGL 463, MEEN 333, 361, 382, MEET 313. Design and performance of laboratory experiments in mechanical engineering.

488: Solids Modeling in Engineering Design. 0-3-3. Preq., Instructor's consent. Engineering design using 3-d graphics, constructive solid geometry, boundary representations, parametric surfaces and data exchange standards. (G)

492: Advanced Mechanical Engineering Design I. 3-1-2. Preq., MEEN 215, 321, 451, 465, ENGL 463 and INEN 300. Open-ended design problems calling for the integration of thermal sciences, machine design, economics, etc. This course will be replaced by MEEN 480, 481, and 482 after the 2004 academic year.

494: Mechanical Engineering Design II. 3-0-1. Preq., MEEN 492. A continuation of MEEN 492. This course will be replaced by MEEN 480, 481 and 482 after the 2004 academic year.


499: Technical Enrichment Course. 3-0-1. (6) Preq., consent of instructor. (Pass/Fail). May be repeated for a maximum of 6 hours of credit. Varying new technologies. Does not count toward graduation in Mechanical Engineering. Contact the department for more information.

531: Advanced Thermodynamics. 0-3-3. Fundamental laws of thermodynamics; entropy and entrophy production; kinetic theory of gasses; statistical thermodynamics; quantum thermodynamics for various systems.


549: Computational Fluid Dynamics. 0-3-3. The fundamentals of computational fluid dynamics (CFD); review of numerical methods and fluid mechanics; application of numerical techniques for solution of sample fluid dynamics problems.

550: Special Problems. 1-4 semester hours credit. Preq., consent of instructor. Topics selected will vary from term to term for the purpose of covering selected topics of current importance or special interest.

553: Research and Thesis in Mechanical Engineering. 3 hours credit. (6) Preq., senior standing and consent of instructor. Topics selected will vary from term to term for the purpose of covering selected topics of current importance or special interest.

555: Practicum. 0-3-3 (6). Preq., 12 semester hours of graduate work. Analytical and/or experimental solution of an engineering problem;
technical literature survey required; development of engineering research techniques. (Pass/Fail)

557: Special Topics: Mechanical Engineering, 0-3-3 (G). The topic or topics will be selected by the instructor from the various sub-areas of mechanical engineering. May be repeated as topics change.


593: Advanced Finite Element Methods, 0-3-3. Development of the finite methods element using the variational formulation. Applications in structures, fluid mechanics and heat transfer.

MECHANICS AND MATERIALS (MEMT)

201: Engineering Materials, 0-2-2. Prq., ENGR 122, PHYS 201. A study of the basic principles which relate the internal structure of materials to their mechanical, physical, and electrical properties.


411: Advanced Engineering Materials, 0-3-3. Prq., MEMT 201 and MEEN 361. An introduction to modern engineering materials. Examination of newer materials such as high strength steels, polymers and composites.

508: Finite Element Analysis, 0-3-3. Linear and nonlinear finite element analysis of continual and discretized structures; use of finite element computer programs to solve typical structural problems.

511: Modern Engineering Materials, 0-3-3. An introduction to modern engineering materials with an emphasis on light weight or high strength materials such as polymers, composites, and high strength steels.

563: Theory of Elasticity, 0-3-3. General equations of elasticity; plane stress and plane strain; torsion and flexure of bars; Hertz contact stresses.

564: Plates and Shells, 0-3-3. Pure bending of plates; laterally-loaded plates; membrane theory of shells; bending of cylindrical and spherical shells.

565: Continuum Mechanics, 0-3-3. Introductory treatment of the fundamental, unifying concepts of the mechanics of continua.


588: Inelastic Deformation, 0-3-3. Analytical and numerical modeling of inelastic deformation in metals, polymers and ceramics, including plasticity, creep, viscoelasticity, and viscoplasticity.

MERCHANDISING AND CONSUMER STUDIES (MCS)

108: Professional Career Orientation, 0-2-2. Structured experiences in career assessment and exploration, leadership, and communication in the professional arena. Includes a field study tour. Open to non-majors.

118: Pattern Design and Construction, 6-1-3. Introduction to basic pattern making techniques, fit, and construction. Some emphasis on techniques, common design patterns, and ready-to-wear construction.

146: Internet for Personal and Family Management, 0-1-1. An introduction to the use of internet for personal and family activities.

219: Textiles I, 0-3-3. Study of fiber properties and production of textiles.

238: Apparel Selection and Analysis of Fashion, 0-3-3. Contemporary apparel needs of individuals and families with recognition of cultural, economic, and psychological factors.


256: Individual and Family Management, 0-3-3. A systems approach to the management of personal and family resources.

258: Professional Selling Experience, 8.5-1-3. Prq., MCS 108 or consent of instructor. Supervised professional selling experience with emphasis on customer satisfaction and service. Field experience with cooperating firms.


308: Buying, 0-3-3. Prq., MCS 258. Buying function in retail organizations. Includes merchandising concepts essential for buyers.

338: Intermediate Apparel Construction, 6-0-2. Prq., MCS 118 or consent of instructor. Emphasis on evaluation and use of advanced construction techniques including tailoring and couture methods.

348: Merchandising and Computer Management, 1-2-2. Prq., MCS 246 and 308 or consent of instructor. Procedures and task management for the retailer through computer applications.

356: Families as Consumers, 0-3-3. Prq., ECON 215. Application of principles of consumerism to family decisions related to time and money use.

366: Consumer Issues, 0-3-3. Issues that arise between sellers/government and consumers including legislation, regulation and safety issues.

388: Media Planning and Promotion, 3-2-3. Prq., HEC 327 and MCS 466. Study and application of principles of product promotion. Emphasis on coordination of customer targeting, communications, media presentation, and special events.

419: Textiles II, 0-3-3. Prq., MCS 219 or consent of instructor. Study of textile products in relation to end-use, product quality, technology and trade regulations. (G)

426: Housing Policy, 0-3-3. Social aspects of housing including zoning, government regulations, and purchase considerations. (G)

429: Issues in Merchandising, 0-3-3. Prq., junior or senior standing. Domestic and international issues affecting merchandising and consumer studies. (G)


439: Historic Costume I, 0-3-3. Development of costume from ancient Egypt through the 17th century, with emphasis on social, economic, and aesthetic influences on its design.

440: Historic Costume II, 0-3-3. Development of costume from 18th century until the present, with emphasis on social, economic, and aesthetic influences. (G)

446: Microcomputers in Personal and Family Management II, 0-3-3. Prq., MCS 246. Advanced study in the use of microcomputers in personal and family management.

456: Consumer Decision Making, 0-3-3. Behavior of the consumer with reference to economic decision making and expenditure patterns relevant to current lifestyles. (G)

466: Consumer Relations, 0-3-3. Prq., HEC 327 or JOUR 450 or consent of instructor. Professional strategies and tactics in consumer studies programs. (G)

488: Visual Merchandising, 3-2-3. Prq., MCS 268 and 466 or consent of instructor. Promotion of products through visual merchandising techniques including display, store layout and design, and the fashion show.

498: Field Study Tour in Merchandising and Consumer Studies, 3-1-3 (6). Structured educational experiences in major industry centers in the United States. Application required. (G)

516: Family and Consumer Economics Issues, 0-3-3. (12) Analysis of family and consumer in the larger economic and political systems.

528: Consumer Motivation and Factors in Apparel, 0-3-3. Relationship of consumer behavior to fashion; analysis of factors relative to production, distribution, and consumption of apparel and textiles.

536: Consumer Needs of Older Population, 0-3-3. Issues facing consumer affairs professionals working with the older consumer.

556: Current Trends in Consumer Decision Making, 0-3-3. (12) Prq., MCS 456 or consent of instructor. Recent advances and current research in behavior of the consumer with reference to economic decision making and expenditure patterns relevant to current lifestyles.
### MICRO SYSTEMS ENGINEERING (MSE)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Type</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>401:</td>
<td>Microsystems Principles</td>
<td>3-3-3</td>
<td>Fundamentals of Microsystems, emphasizing the basic principles, materials, fabrication, measurement, and applications of Microsystems.</td>
<td></td>
</tr>
<tr>
<td>402:</td>
<td>Microfabrication Principles</td>
<td>3-3-3</td>
<td>Fundamentals of microfabrication processes for the realization of microelectromechanical and microelectronic devices.</td>
<td></td>
</tr>
<tr>
<td>403:</td>
<td>Microfabrication Applications and Device Fabrication</td>
<td>3-2-3</td>
<td>Microfabrication processes, process integration and applications for the realization of microelectromechanical and microelectronic devices.</td>
<td></td>
</tr>
<tr>
<td>404:</td>
<td>Advanced Materials for Micro/Nano Devices and Systems</td>
<td>0-3-3</td>
<td>Fundamentals of advanced materials used for the realization of micro/nano devices and systems, emphasizing the properties and characteristics of various materials.</td>
<td></td>
</tr>
<tr>
<td>405:</td>
<td>Nanotechnology Principles</td>
<td>0-3-3</td>
<td>Fundamentals of nanotechnology, emphasizing the basic principles, materials, fabrication, measurement, and applications of nanotechnology.</td>
<td></td>
</tr>
<tr>
<td>406:</td>
<td>Micro/Nano Scale Materials Measurements and Analysis</td>
<td>0-3-3</td>
<td>Fundamentals of micro/nano scale materials measurements and analysis, based on modern techniques.</td>
<td></td>
</tr>
<tr>
<td>457:</td>
<td>Special Topics: Micro Systems Engineering</td>
<td>0-3-3 (9)</td>
<td>The topic or topics will be selected by the instructor from the various sub-areas of micro systems engineering. May be repeated for a maximum of 9 credit hours with a change of course content.</td>
<td></td>
</tr>
<tr>
<td>501:</td>
<td>Microsystems Principles</td>
<td>0-3-3</td>
<td>Fundamentals of Microsystems, emphasizing the basic principles, materials, fabrication, measurement, and applications of Microsystems.</td>
<td></td>
</tr>
<tr>
<td>502:</td>
<td>Microfabrication Principles</td>
<td>3-3-3</td>
<td>Fundamentals of microfabrication processes for the realization of microelectromechanical and microelectronic devices.</td>
<td></td>
</tr>
<tr>
<td>503:</td>
<td>Microfabrication Applications and Device Fabrication</td>
<td>3-2-3</td>
<td>Microfabrication processes, process integration and applications for the realization of microelectromechanical and microelectronic devices.</td>
<td></td>
</tr>
<tr>
<td>504:</td>
<td>Advanced Materials for Micro/Nano Devices and Systems</td>
<td>0-3-3</td>
<td>Fundamentals of advanced materials used for the realization of micro/nano devices and systems, emphasizing the properties and characteristics of various materials.</td>
<td></td>
</tr>
<tr>
<td>505:</td>
<td>Nanotechnology Principles</td>
<td>0-3-3</td>
<td>Fundamentals of nanotechnology, emphasizing the basic principles, materials, fabrication, measurement, and applications of nanotechnology.</td>
<td></td>
</tr>
<tr>
<td>506:</td>
<td>Micro/Nano Scale Materials Measurements and Analysis</td>
<td>0-3-3</td>
<td>Fundamentals of micro/nano scale materials measurements and analysis, based on modern techniques.</td>
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</tbody>
</table>

### MOLECULAR SCIENCES AND NANOTECHNOLOGY (MSNT)

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Type</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>500:</td>
<td>Research and Thesis in Molecular Sciences and Nanotechnology</td>
<td>0-3-3 (6)</td>
<td>Independent study. Topics and course policies to be established by instructor for each student. May be repeated for credit up to 6 semester hours with topic change.</td>
<td></td>
</tr>
<tr>
<td>501:</td>
<td>Selected Topics in Molecular Sciences</td>
<td>0-3-3 (6)</td>
<td>The topic or topics will be selected by the instructor from the various scientific disciplines that fall under the umbrella of molecular sciences. May be repeated for credit up to 6 semester hours with topic change.</td>
<td></td>
</tr>
<tr>
<td>502:</td>
<td>Principles of Cell and Molecular Biology</td>
<td>0-3-3</td>
<td>Principles of modern techniques, including molecular structure and function, cellular processes, bioenergetics, and regulation of metabolism.</td>
<td></td>
</tr>
<tr>
<td>549:</td>
<td>Practicum in Molecular Sciences and Nanotechnology</td>
<td>0-3-3</td>
<td>(Pass/Fail). Preq., 12 semester hours of graduate work. Experimental or computational study of a relevant problem in one of molecular sciences and nanotechnology research areas.</td>
<td></td>
</tr>
<tr>
<td>551:</td>
<td>Research and Thesis in Molecular Sciences and Nanotechnology</td>
<td>0-3-3</td>
<td>(Pass/Fail). Preq., 12 semester hours of graduate work. Registration in any quarter is for three semester hours credit or multiples thereof. Maximum credit applicable towards the degree is six semester hours.</td>
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</tbody>
</table>

### MUSIC APPLIED, CLASSES & RECITALS (MUAP)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Type</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>100:</td>
<td>General Recital</td>
<td>1-0-0</td>
<td>A weekly, live performance laboratory for all music majors and minors taken concurrently with private lessons. Includes evening recital and concert attendance as required by the respective private lesson studio.</td>
<td></td>
</tr>
<tr>
<td>102:</td>
<td>Class Voice</td>
<td>1-1-1</td>
<td>Group instruction in the techniques of the singing voice.</td>
<td></td>
</tr>
<tr>
<td>111:</td>
<td>Class Piano I - Major</td>
<td>3-0-1</td>
<td>Permission of instructor. Introduction to the piano for the music major. Students work on reading two clefs, basic piano technique, sightreading, and repertory.</td>
<td></td>
</tr>
<tr>
<td>112:</td>
<td>Class Piano II - Major</td>
<td>3-0-1</td>
<td>Preq., MUAP 111 or permission of instructor. Continuation of MUAP 111, with more fundamental playing skills. Students work on two octaves scales, harmonization, sightreading, and repertory.</td>
<td></td>
</tr>
<tr>
<td>113:</td>
<td>Class Piano II - Major</td>
<td>3-0-1</td>
<td>Preq., MUAP 112 or permission of instructor. Continuation from MUAP 112. Students work on more advanced playing skills, improvisation, and score-reading.</td>
<td></td>
</tr>
<tr>
<td>233:</td>
<td>Italian Diction</td>
<td>1-1-1</td>
<td>Pronunciation of Italian art song.</td>
<td></td>
</tr>
<tr>
<td>234:</td>
<td>German Diction</td>
<td>1-1-1</td>
<td>Pronunciation of German art song (Lieder).</td>
<td></td>
</tr>
<tr>
<td>399:</td>
<td>Undergraduate Recital</td>
<td>1-0-0</td>
<td>Preq., Recital Committee approval. For all music majors, preparation and performance of a degree recital of not less than 25 minutes of music.</td>
<td></td>
</tr>
<tr>
<td>499:</td>
<td>Undergraduate Recital</td>
<td>1-0-0</td>
<td>Preq., Recital Committee approval. For Bachelor of Fine Arts in Music Performance degree candidates, preparation and performance of a degree recital of not less than 50 minutes of music.</td>
<td></td>
</tr>
</tbody>
</table>

*This course will be accepted for general education transfer credit. A course MAY or MAY NOT be accepted as equivalent to or substitute for a course in a specific discipline or major. Please check the Board of Regents Web site at [http://www.regents.state.la.us/](http://www.regents.state.la.us/) and the school you are transferring to for additional information.*
MUSIC APPLIED, PRIVATE LESSONS (MUPV)

Music Applied courses refer to private lessons taken in the appropriate studio in an area declared by the student. In order to be eligible to register for 400-level courses a student must pass an upper-division jury. This is usually done in the Spring of the Sophomore year. This rule applies only to music majors. Non-music majors may enroll at the 100 level according to the limitation of the applied instructor's schedule. All students must have the approval of the applied music instructor before registering for private lessons.

Minor Level

These courses are designed for students electing to minor in music, majors studying a secondary instrument, and non-music majors. Students register in the specific area or instrument as designated by the course number. Students minor ing in music must also register for MUAP 100: General Recital concurrently with private study.

191: Applied Composition – Minor. 3-0-1.

Lower Division

These courses are designed for the music major studying privately at the lower division level whose declared major is in the specific area designated by the course number. The letter "A" is added to the end of the course number to indicate 1 hour of credit and the letter "B" indicates 2 hours of credit.

221: Applied Organ - Major. 1-2 semester hours.
253: Applied Cello - Major. 1-2 semester hours.
255: Applied Guitar - Major. 1-2 semester hours.
262: Applied Oboe - Major. 1-2 semester hours.
263: Applied Bassoon - Major. 1-2 semester hours.
264: Applied Clarinet - Major. 1-2 semester hours.
275: Applied Tuba - Major. 1-2 semester hours.

Upper Division

These courses are designed for the music major studying privately at the upper division level whose declared major is in the specific area designated by the course number. Students must have passed the upper division exam to be eligible. The letter "A" is added to the end of the course number to indicate 1 hour of credit and the letter "B" indicates 2 hours of credit.

452: Applied Viola - Major. 1-2 semester hours.
453: Applied Cello - Major. 1-2 semester hours.
455: Applied Guitar - Major. 1-2 semester hours.

463: Applied Bassoon - Major. 1-2 semester hours.
475: Applied Tuba - Major. 1-2 semester hours.

MUSIC DIRECTED STUDIES (MUDS)

450: Directed Studies. 1-4 semester hours (6). Preq., consent of advisor. Selected study in an identified area in Music. Credit depends on the nature of problem and work accomplished. May be repeated for credit.

550: Directed Studies. 1-4 semester hours (6). Preq., consent of advisor. Selected study in an identified area in Music. Credit depends on the nature of the problem and work accomplished. May be repeated for credit.

MUSIC ENSEMBLE (MUEN)

Students of Freshman or Sophomore standing sign up for 200 level. Students who have achieved Junior or Senior level standing sign up for 400 level.

200/400: Chamber Ensemble. 1-0-1 (6). Instruction and performance in small instrumental or vocal ensembles.


233/433: Gospel Choir. 2-0-1 (6). Instruction and performance in vocal ensemble with emphasis on ethnic, religious material.

234/434: Opera Workshop. 1-0-1 (3). A function study in opera performance including vocal, dramatic, and technical aspects of opera production.

251/451: Chamber Orchestra. 4-0-1 (6). Preq., audition. Instruction and performance in string ensemble.

260/460: Musical Stage Orchestra. 3-1-2 (8). Orchestral experience with literature and techniques of music theatre.

261/461: Musical Stage Production. 3-1-2 (8). Practical study of theories, practices and techniques of musical stage production.


272/472: Fall Wind Ensemble. 1-0-1 (2). Preq., audition. Open to any major. Instruction and performance in concert band. Includes reading and study of selected works from the major standard band repertoire for participating music majors.


275/475: University Jazz Ensemble. 3-0-1 (6). Preq., audition. Performance and instruction in stage band ensemble covering a variety of jazz styles and genres.

276/476: Low Brass Ensemble. 3-0-1 (6). Preq., consent of instructor. Performance and instruction in low brass ensembles and literature.


MUSIC GENERAL (MUGN)


152: Beginning Guitar. 2-0-2 (6). Preq., consent of instructor. Instruction in beginning guitar techniques for the non-music major.

290: Music Appreciation. 0-3-3. Satisfies General Education Requirement for Fine Arts Appreciation. For non-music majors. Attempts to answer the question "What is Music?" by acquainting students with knowledge and appreciation of music from several cultures and eras. Statewide Transfer Agreement Course.*

400: Beginning Your Music Career. 0-3-3. Preq., consent of instructor. Course designed to prepare students for a career in music.

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MUSIC HISTORY AND LITERATURE (MUHS)

101: Music Literature I. 0-2-1. A broad survey of music literature from the Middle Ages to the Early Baroque. Includes selected music of Native American peoples.

102: Music Literature II. 0-2-1. A broad survey of music literature from the Baroque through the Classical era.

103: Music Literature III. 0-2-1. A broad survey of music literature from the Romantic era to the modern era. Includes selected world music.

301: Music History I. 0-2-2. Preq., MUTH 102 or permission of instructor. A survey of the specific periods of music and its literature, from antiquity through the Renaissance.

302: Music History II. 0-2-2. Preq., MUTH 102 or permission of instructor. Continuation from MUHS 301, from the Baroque and into the Classical era.

303: Music History III. 0-2-2. Preq., MUTH 102 or permission of instructor. Continuation from MUHS 302, from the Romantic to the present era. Includes music of sub-Saharan Africa and Indonesia.

306: Introduction to Non-Western Music. 0-2-2. Preq., MUHS 305 or permission of instructor. An introduction to the music and musical life of the world’s peoples by sampling and by synthesis.

307: Introduction to Jazz History. 0-2-2. Preq., MUHS 305 or permission of instructor. Cultivate in the music major an understanding of jazz music through a comprehensive study of major artists and styles from 1900 to the present.

410: Piano Literature. 0-3-3. A survey of piano literature from the Classic Period to the present including literature composed for earlier keyboard instruments.

430: Vocal Literature. 0-3-3. A survey of vocal literature covering a wide diversity of composers, styles, and historical periods through discussion and analysis of representative works including assignments in listening, performance, and reading.

431: Choral Literature. 0-2-2. A survey of choral literature covering a diversity of composers, styles, and historical periods through discussion and analysis of representative works.

432: Survey of Opera. 0-3-3. Preq., permission of instructor. Designed to cultivate in students an understanding and enjoyment of opera by surveying selected, significant operatic works through viewing and analysis.

433: Survey of American Music Theatre. 0-3-3. Preq., MUGN 290 or SPHT 290. Designed to increase the understanding and appreciation of the American Music Theatre genre through the study of musical theatre works, composers, lyricists, directors, and performers.

MUSIC PEDAGOGY (MUPD)

200: Teaching Techniques Middle School Band. 3-0-1. Teaching techniques for middle school band put into practice through hands on teaching with the A.E. Phillips Lab School Band.

300: Beginning Conducting. 1-1-1. Elementary methods, principles and practice of conducting.

301: Choral Conducting. 1-2-2. Preq., MUTH 201 and MUPD 300. Principles of interpretation and score reading with emphasis on choral conducting. Includes laboratory experience with the choral ensembles.

302: Instrumental Conducting. 1-2-2. Preq., MUTH 201 and MUPD 300. Principles of interpretation and score reading with emphasis on instrumental conducting. Includes laboratory experience with the instrumental ensembles.


304: Marching Band Drill Design. 3-0-1. This course provides practical application in the elements of marching band show planning, design, and teaching.

311: Piano for Vocal Education. 2-0-2. Preq., students must have passed all parts of the piano proficiency exam and have the consent of the instructor. Experiences in improvising, transposing, and performing vocal accompaniments at the piano. These skills are required for vocal music education majors.

331: Vocal Methods. 1-1-1. Group instruction in the singing voice including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

334: Elementary Teachers Appreciation/Methods. 0-3-3. Provides an understanding and appreciation of the elements of music.

351: String Methods. 2-0-1. Group instruction in strings including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

352: Guitar Methods. 2-0-1. Group instruction in fretted instruments including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

361: Flute Methods. 2-0-1. Group instruction in flute including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

362: Single Reed Methods. 2-0-1. Group instruction in single reed instruments including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

363: Double Reed Methods. 2-0-1. Group instruction in double reed instruments including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

371: High Brass Methods. 1-1-1. Group instruction in high brass instruments including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

372: Low Brass Methods. 2-0-1. Group instruction in low brass instruments including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

381: Percussion Methods I. 2-0-1. Group instruction in percussion instruments including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

382: Percussion Methods II. 2-0-1. Preq., MUPD 381. Continuation of MUPD 381.

410: Piano Pedagogy I. 1-1-2. Methods and materials used in teaching piano to beginners. Required by the State Department of Education for teachers wishing to be certified in piano.


430: Vocal Pedagogy. 1-1-2 (4). Methods and materials of teaching voice in private studio and/or in school.

455: Guitar Pedagogy I. 3-1-2. Methods and materials of teaching guitar in private studio and/or in school.

456: Guitar Pedagogy II. 3-1-2. Continuation of MUPD 455. Practice teaching of beginning students is integral to this course.

461: Flute Pedagogy I. 3-1-2. Methods and materials of teaching flute in private studio and/or in school.

462: Flute Pedagogy II. 3-1-2. Continuation of MUPD 461. Practice teaching of beginning students is integral to this course.

464: Elementary Music Methods. 0-3-3. An overview of the methodologies of Orff, Kodaly, and Dalcroze. Learning to plan, execute and evaluate music programs in the elementary school. Includes observation at the elementary level.

465: Secondary Vocal Methods. 0-3-3. Examines the materials and methods for the teacher and supervisor of vocal music, e.g., program building, contests, festivals, requisitions, grading, materials, scheduling, and rehearsing. Includes observation at the secondary level.

466: Secondary Instrumental Methods. 0-3-3. Examines the materials and methods for the teacher and supervisor of instrumental music, e.g., program building, contests, festivals, requisitions, grading, materials, scheduling, and rehearsing. Includes observation at the secondary level.

467: Clarinet Pedagogy I. 3-1-2. Methods and materials of teaching clarinet in private studio and/or in school.

468: Clarinet Pedagogy II. 3-1-2. Continuation of MUPD 468. Practice teaching of beginning students is integral to this course.

471: Trumpet Pedagogy I. 3-1-2. Methods and materials of teaching trumpet in private studio and/or in school.

472: Trumpet Pedagogy II. 3-1-2. Practice teaching of beginning students is integral to this course.

475: Tuba Pedagogy I. 3-1-2. Methods and materials of teaching tuba in private studio and/or in school.

476: Tuba Pedagogy II. 3-1-2. Practice teaching of beginning students is integral to this course.

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MUSIC TECHNOLOGY (MUTC)

141: Music Technology. 1-2 semester hours. Individualized instruction in the techniques of working with various sound sources and resources in the field of music technology.

301: Computer Science in Music. 2-2-3. Study of general computer applications and music related applications including notation, graphics, sound generation, sequencing, audio manipulation, and other related uses.

MUSIC THEORY (MUTH)

100: Rudiments of Music Theory. 0-2-2. Instruction in the fundamentals of music theory including reading, notation, and aural skills.


201: Music Theory IV. 2-2-2. Preq., MUTH 103. Continuation of MUTH103 with emphasis on the organization and interaction of melodic, harmonic and rhythmic concepts and music forms. Aural training and functional keyboard is intensified in proportion to the depth of course content.


301: Music Composition. 0-3-3. Preq., MUTH 203. A survey of the techniques of 20th century composition with projects consisting of the writing of short compositions illustrating these techniques.

302: Form and Analysis. 0-3-3. Preq., MUTH 203. A study of specific examples of the major forms of composition to show the relative importance of detail to the overall comprehension of a composition.


370: Instrumental Arranging. 0-2-2. Preq., MUTH 203. A study of writing for the individual instruments of the band and orchestra, the combinations of instruments in the various sections, and the combination of all the sections.

401: Counterpoint. 0-3-3. Preq., MUTH 203. A study of contrapuntal practice of the 18th and 19th centuries with emphasis on the understanding of counterpoint within a harmonic context.

NURSING (NURS)

109: Introduction to Nursing. 0-2-2. An introduction to the health care system and professional nursing. Basic human needs, the elderly client, and concepts related to death and dying are introduced.

110: Introduction to Application of the Nursing Process. 8-0-3. Coreq., NURS 109, and credit or registration in BISC225 and 226. Acquaints the student with basic nursing principles and techniques of safe nursing care to meet basic human needs. Emphasis on interpersonal skills, communication, interviewing and observation.

112: Adult Health Maintenance I. 8-3-5. Preq., NURS 109 and 110 and BISC 225 and 226 and credit or registration in BISC227. Study, identification and application of nursing knowledge and skills related to adult health needs. Emphasis on patient-centered care utilizing the nursing process.

113: Introduction to Associate Degree Nursing. 0-0-10. Emphasizes the nursing process and basic human needs with introduction to associate degree nursing roles. Principles are applied with validation in the clinical setting.

114: Adult Health Maintenance II. 8-3-5. Preq., NURS 112 and BISC 225, 226, and 227. Continuation of the study, identification and application of nursing knowledge and skills related to adult health needs. Emphasis on patient-centered care utilizing the nursing process.

116: Adult Neuro/Psycho-Social Health Maintenance. 8-3-5. Preq., NURS 114 and PSYC 102. Utilizes nursing knowledge/skills in provision of health care. Emphasis on nursing care of clients experiencing threats to needs as a result of neuro-psycho-social dysfunction.

210: Maternal/Newborn Health Maintenance. 8-3-5. Preq., NURS 116. Study/application of principles and concepts of family-centered maternal/newborn care. Emphasis on meeting specific needs of clients during the childbearing cycle and newborn period.

212: Child Health Maintenance. 8-3-5. Preq., NURS 116 and PSYC 408. Study/application of nursing knowledge/skills related to children's and adolescent's health needs. Includes growth and development, family, and prevention of and intervention in illness.

214: Nursing Seminar. 0-1-1. Preq., Credit in all previous nursing courses. Study of current nursing trends in light of evolving patterns and practices. Emphasis on professional opportunities and obligations and legal aspects of nursing practice.

216: Nursing Practicum. 24-4-7. Coreq., NURS 214. Preq., Credit in all other nursing courses. Integration of knowledge and skills acquired in previous nursing courses in caring for clients with complex and/or multiple threats to basic needs.

PHILOSOPHY (PHIL)

201: Introduction to Philosophy. 0-3-3. Preq., junior standing or permission of the instructor. Philosophical vocabulary; types and problems of philosophy; major philosophical positions. Statewide Transfer Agreement Course*.

305: Ethics. 0-3-3. Preq., PHIL 201 or permission of the instructor. A study of the writings of the major moral philosophers, beginning with the Greeks and continuing to the present.

PHYSICS (PHYS)

102: Introductory Physics. 2-1-1. An introductory survey of physics, use of library resources, and basic computation.

103: Introductory Physics. 2-1-1. A continuation of PHYS 102.

104: Introductory Physics. 2-1-1. A continuation of PHYS 103.


202: Physics for Engineering and Science II. 0-3-3. Preq., PHYS 201 and MATH 242. A continuation of PHYS 201, with emphasis on electromagnetic phenomena and optics.

205: Conceptual Physics I. 0-3-3. Qualitative discussion of physical principles and concepts, intended for non-technical majors and those interested in the cultural aspects of the subject.

206: Conceptual Physics II. 0-3-3. A continuation of PHYS 205.


210: General Physics II. 0-3-3. Preq., PHYS 209. An introduction to PHYS 209, with emphasis on problems in electricity and magnetism, optics, and modern physics. Statewide Transfer Agreement Course*.

220: Astronomy - The Solar System. 0-3-3. An introduction to astronomy, covering the history of astronomy and the solar system. Statewide Transfer Agreement Course*.

221: Introduction to Astrophysics. 0-3-3. Introduction to astronomy, with emphasis on physical principles. Application of mechanics to orbits of planets and multiple stars. Atomic theory applied to stellar spectra. Nuclear reactions in stars.

230: Astronomy - The Stars and Galaxies. 0-3-3. An introduction to Astronomy, covering the stars, galaxies, and the universe.

261: General Physics Laboratory. 4 1/2-0-1. Preq., MATH 112 or 241. Laboratory investigations of basic physical principles. Statewide Transfer Agreement Course*.

262: General Physics Laboratory. 4 1/2-0-1. Preq., MATH 112 or 241. Laboratory investigations of basic physical principles. Statewide Transfer Agreement Course*.

303: Geometrical Optics. 0-3-3. Preq., PHYS 202. The study of thick lenses, lens system layouts, aberrations, photometric theory applied to optical systems, optical instruments and matrix optics.


320: Optics Laboratory I. 4 1/2-0-1. Experiments in optics to demonstrate optical phenomena.

350: Introduction to Lasers. 0-3-3. Preq., six hours of physics. Introduction to modern laser technology. A semi-quantitative approach presents all known types of lasers. Applications such as measurements,