

Accounting

ACC 520 Accounting for Managers (3)

The objective of this course is to familiarize students with the basic principles of short-term financial planning. Topics coverage shall include (1) trends flow statement development and analysis, on both cash and working capital bases, (2) common size analysis, (3) index analysis, (4) cash budgeting, (5) working capital management, (6) pro forma statement development and analysis, and (7) general forecasting methodologies (including subjective, historical, and causal techniques).

ACC 571 Advanced Management Accounting (3)

Students will learn techniques for budgeting, cost-volume-profit analysis, segment evaluation and analyzing operating constraints. They will research and develop solutions to various advanced management accounting problems through case studies and problems from the CMA Exam. Finally, the students will present their analysis and recommendations orally and in writing. Prerequisite: Management Accounting (ACC 305), or Cost Accounting (ACC 370) or equivalent.

ACC 585 Financial Statement Analysis and Reporting (3)

Investigates business objectives through financial analysis, cash budgeting, and ratio analysis. Additional topics may include capital budgeting, utility analysis, basic portfolio concepts, the capital asset pricing model, and the study of efficient markets. Long-term financing strategies of the corporation, including the theory of valuation for corporate securities, capital structure theory, dividend policy, and analysis of overall cost of capital to the corporation. Prerequisite: ACC 520.

ACC 591 Independent Study (3)

Extensive study and research on a particular topic of student interest under the supervision of a faculty member. The student is required to submit a written proposal which includes a description of the project, its duration, educational goals, method of evaluation and number of credits to be earned.

ACC 595 Internship (3)

Internship placements provide students with a field experience related to their academic preparation enabling them to apply classroom instruction to the work site. Students are placed with an organization related to their major and specific area of interest to work along with, and be proctored by, experienced professionals. These are opportunities that cannot be duplicated in the classroom environment and provide an excellent transition into the field.

ACC 611 Advanced Income Tax Research (3)

Focus on the study of federal tax legislation and IRS regulation of corporations, partnerships, estates and trusts. Special attention is given to capital gains and losses, normal tax and surtax, income and deductions for domestic, international, and multinational corporations. Tax research will be conducted through the analysis of IRS rulings on court cases.

ACC 630 Fund Accounting (3)

Accounting principles and procedures as applied to not-for-profit entities are covered. In addition, the accounting standards and reporting requirements that relate to not-for-profit entities will be reviewed and analyzed.

ACC 650 Advanced Auditing Theory (3)

Advanced review of auditing standards and techniques, computerized auditing systems, SEC regulations, legal liability, and professional ethical standards.

ACC 685 Advanced Financial Accounting Theory (3)

An examination and analysis of Generally Accepted Accounting Principles (GAAP). The course reviews Financial Accounting Standards (FAS) in detail and includes a critical review of the research that is at the theoretical foundations of GAAP. In addition, the process by which the Financial Accounting Standards Board promulgates new FAS will also be analyzed.

Advanced Technology

MST 502 Engineering Economy (3)

Study of the application of technical and economic analysis, with the goal of deciding which course of action best meets technical performance criteria and

uses scarce capital in a prudent manner. Applied software technology will be used to analyze the economy of new product designs, structures, systems, qualities, reliabilities, and services. Prerequisite: College Algebra.

MST 503 Recent Advances in Technology (3)

This course will analyze current and future trends and original research advances in the two concentration areas of the MSAT program. The course will include seminars, invited lectures and visits. It will be taught by a team of instructors.

MST 510 Engineering and Society (3)

The interaction between engineering and society has had many unexpected results. Students will learn how the major engineering systems have impacted society and how society changed the final design of the engineering systems. The course will look at both intended and unintended consequences of the final engineering design.

MST 515 Transportation Terminal Design (3)

Transportation terminal design requires that engineers look at the interactions between passengers, freight and the transportation systems that they use. The design of terminals is a key component of a transportation system. Terminals are designed to provide security, storage, and access to different modes of transportation. The course will focus on airports, rail stations and truck terminals.

MST 520 Network Technology for Multimedia Systems (3)

The course deals with the study of networking for automated manufacturing, medical and commercial systems. Protocols, configurations, topologies, such as broadband cable and for dynamic networks are discussed. Use of optical networks for interactive video, wireless networks and virtual reality for industrial usage will also be introduced.

MST 525 Issues in Transportation (3)

Examines issues affecting the transportation industry. Issues include toll roads, security, congestion management, Intelligent Transportation Systems and telecommuting and issues of interest to the class. Discussions focus on the methods involved and the societal impacts due to changing the current transportation system. Pre/Corequisites: MST 510 or permission of the instructor.

MST 535 Advanced Traffic Engineering (3)

Advanced course in traffic operations analysis. Topics include traffic flow theory, signalized control theory, interchange analysis, and small and large network analysis using simulation. Prerequisite: CTC 340 or equivalent.

MST 540 HVAC System Design (3)

HVAC system design, Comfort Design/Product Categories, Psychrometric Theory, Applied Psychrometrics, Mechanical refrigeration, Load Estimating, Design Project. Prerequisites: An undergraduate degree in Mechanical Engineering Technology / Engineering or consent of instructor.

MST 550 Constant Volume System Design (3)

Constant Volume Packaged and Split System Design, Concepts of Exposure Zoning, Occupancy Zoning and Zoning with Unzoned Systems, Outdoor Air Analysis, Packaged Equipment Familiarization and Selection, Room Air Distribution, Duct Design, Direct Digital Control (DDC) Systems, Packaged Split Systems, Refrigerant Piping Design, Design Project. Prerequisites: An undergraduate degree in Mechanical Engineering Technology/Engineering or consent of instructor.

MST 560 Variable Volume/Temperature (VVT) and Variable Air Volume (VAV) System Design (3)

Variable Volume/Temperature (VVT) and Direct Expansion Variable Air Volume (VAV) System Design, Product Recognition, Applied HVAC Acoustics, Zoning and Central Equipment, VVT Air Terminal Design, VAV Air Terminal Design, Direct Expansion (DX) Coils/Air Handlers Familiarization, Split System Selection/DX Piping Design, VAV Fan Performance and Control Systems, Design Project. Prerequisites: An undergraduate degree in Mechanical Engineering Technology/Engineering or consent of instructor.

MST 570 Design and Analysis of Experiments (3)

The use of experiment design early in the product cycle can substantially reduce development lead time and cost, leading to processes and products that perform better in the field and have higher reliability than those

developed by using other approaches. Students will learn principles as well as implementation of experimental design in developing products and manufacturing processes that are robust to environment factors and other sources of variability.

MST 571 Applied Water System Design (3)

Applied Water System design, Water Coils, Fan Coil/Air Handling Units, Control Valves, Piping System Layout, Water Pipe Sizing, Chiller Systems/Selection, Water Pumps, Cooling Towers, Design Project. Prerequisites: An undergraduate degree in Mechanical Engineering/Technology/Engineering or consent of instructor.

MST 576 Mechanical Design with ALGOR & ProE (3)

In-depth study of Finite Element Theory and its application. Emphasis will be given to discretization, modeling and interpretation of results. Software packages such as ALGOR and ProE will be extensively used. Two hours of lecture and two hours of laboratory per week. Prerequisites: MST 500, MAT 322 or equivalent.

MST 580/CSC 580 Computer and Robotic Vision (3)

Two and three dimensional systems, image formation, sensor devices, illumination, processing of images, feature extraction & recognition, robotics inspection, actor devices.

MST 598 Industrial Instrumentation & Signal Processing (3)

In-depth study of instruments and methods for measuring phenomena such as temperature, pressure, speed, and acceleration, with an emphasis on industrial applications. Topics include the generation of signals by electro-mechanical transducers, computer-based data acquisition and storage, and processing of electrical signals using techniques such as amplification, conditioning, filtering, and analog-to-digital conversion.

MST 622 Intelligent Control Systems (3)

First, the traditional control techniques are introduced and contrasted with intelligent control. Fuzzy logic then, is introduced as one of the methods for representing and processing information. Advantages of fuzzy logic over other techniques are pointed out, while indicating some limitations as well.

MST 640 Dynamics of Rigid Body (3)

In depth study of planar kinematics and kinetics of Rigid Body. Topics include translation, rotation principle of work and energy, impulse angular momentum, and gyroscope motion. Prerequisite: MTC 430 or Calculus Based Dynamics Course.

MST 673 System Simulation (3)

The course addresses the following topics: Overview of computer modeling and simulation, systems and models, queuing theory, simulation of discrete and continuous systems, simulation software packages.

MST 680 Reliability and Quality Assurance (3)

This course is a study of applications of reliability-maintainability models, reliability testing and analysis, and quality engineering-design, process, control and quality transformation. Prerequisite: Statistics, Statistical Quality Control or equivalent or consent of instructor.

MST 682 Topics in Computer Integrated Manufacturing (CIM) (3)

An overview of the components of CIM Enterprise, System Design, Material Handling, Materials Requirement Planning (MRP), Manufacturing Resource Planning (MRPII), Manufacturing Database and Management, Expert Systems for Manufacturing. Two hours of lecture and two hours of laboratory per week. Prerequisites: An undergraduate course in CAD or CAM or CIM, or consent of instructor.

MST 690 Project (3)

The course deals with the design or in depth analytical or experimental study of a topic chosen from the area of advanced technology. Oral examination and formal, bound report is required. Project will be conducted under the guidance of appropriate faculty. It will be assigned on the basis of faculty interest and preparation of the students. Prerequisite: Graduate status.

Anthropology

ANT 531 Methods of Research: Ethnographic Data Collection and Analysis (3)

Examines the epistemological presumptions and methodological strictures of field work/participant observation in the anthropological tradition.

Compares this to Positivist and Postmodernist approaches. Trains students to use ethnographic methods and compares them with other qualitative methods informed by this perspective (i.e. in-depth interviews and content analysis) in applied research and practice settings. Evaluates a range of contemporary appropriations of the ethnographic gaze from information systems development to evaluation. Cross listed with ANT 460.

Applied Sociology

SOC 500 Designing Interventions (3)

Investigates the relationship between an understanding of a problem and the development of a specific program/intervention. Techniques addressed include goal and objective formation, and the integration of the intervention into the organizational setting. Examines existing programs/interventions as to their conceptual basis and analytical approach.

SOC 510 Social Paradigms and Interventions (3)

Explores the strengths and weaknesses of the paradigms (interrelated epistemological, theoretical, and methodological ideas) that shape sociological practice. Emphasizes classic and contemporary paradigms rooted in empiricism, materialism, and subjective idealism. Encourages students to pursue integrative approaches to the formulation, execution, and evaluation of interventions.

SOC 521 Crime and Social Policy (3)

Examines and evaluates criminal justice policy in the United States from historical, structural, and cross-national perspectives. Reviews theory and research supporting fundamental reconceptualizations of crime and criminal justice. Systematically explores alternatives to existing policy.

SOC 532 Methods of Research: Survey and Experimental Design (3)

Places emphasis on positivist approaches to social research processes in applied settings. Applies hypothesis construction, research design, and data collection and data analysis to needs assessment and evaluation requirements of organizations. Utilizes the Statistical Packages for the Social Sciences (SPSS) to construct and analyze real world databases. Prerequisite: Undergraduate Statistics with a B- or better.

SOC 533 Methods of Research: Statistical Analysis (3)

Reviews causal logic and uses descriptive statistics, cross-tabulation and regression analysis, as well as other relevant inferential statistical techniques, to analyze social data with emphasis upon program outcome and evaluation data. Examines the significance of the requisite assumptions and interpretation of findings for specific statistical techniques. Relies on computer based analysis using SPSS. Prerequisite: SOC 532.

SOC 534 Methods of Research: Qualitative Research Techniques (3)

Explores qualitative research methods including in-depth interviewing, oral history, content analysis, historical research, narrative analysis, visual data, participant observation, case study research, and others within the context of community development. Reviews models and methods of participatory and collaborative research from fields including sociology, geography, planning, natural resources, anthropology, history, community and occupational health, and community, rural and urban development, among others.

SOC 574 Drug Epidemics (3)

Explores the conditions under which societal-wide drug epidemics (rapid rises in the use of psychoactive substances) occur. Examines in detail the current resurgence of drug use among youth that began among the youngest drug users in the early 1990s. Employs national trend data to determine onset conditions, the sociological characteristics of groups that led the epidemic, the pathways through which drug use expands in specific age groups, and the consequences of rising rates of drug use by the youngest users. Emphasizes empirically based identification of strategic points for societal intervention. Serves as an introduction to aggregate data analysis.

SOC 590 Selected Topics in Sociology (3)

Provides students with the opportunity to investigate selected sociological subject matter. Topics will typically illustrate the application of sociological and anthropological theory and research to social services or criminology. Students may receive credit in a future semester for different topic areas.

SOC 591 Independent Study in Sociology (3)

Provides an opportunity for students to go beyond the existing curriculum. Requires an application and the agreement of a faculty advisor. (Pending)

SOC 595 Practicum in Sociology (3)

Integrates academic and practical experience during one semester placement in an appropriate social service, criminal justice, or work-related community setting. Involves execution of a social practice project, negotiated among student, staff, and placement supervisor. This requirement is waived if the student has appropriate experience in a practice setting.

SOC 596 Proposal and Grant Writing Seminar (3)

Explores all aspects of the proposal process from the most basic questions about form and style to the task of seeking funding and support, or committee approval, to what to do after the proposal is approved or funded. In particular, the focus is on developing, designing, preparing, and presenting effective research proposals to university review committees and funding bodies.

SOC 597 Seminar in Applied Sociology (3)

Supports completion of a viable independent scholarly project. Students will work with an advisor to design, develop, conduct, and present an independent scholarly project for review and approval. A two-semester sequence allows students to develop their independent scholarly work from start to finish within a structured context. Students are required to take this two-semester course sequentially fall/spring and with instructor's permission. Grade of B or better required. At least 21 credit hours toward the degree including SOC 510, SOC 532, SOC 533 and a grade of B or higher in SOC 532.

SOC 598 Independent Project Supervision (Variable 1-3)

Supports completion of a viable project. Students must work with an advisor to develop an acceptable project proposal, to implement that proposal, and to evaluate its result. Students will be asked to maintain on-going enrollment in project supervision by signing up for one credit each semester. A maximum of 3 credits will count for degree credit.

SOC 599 Thesis (Variable 1-3)

Supports completion of a viable thesis. Students must work with an advisor to develop an acceptable thesis proposal, to implement the thesis proposal, and to evaluate its effectiveness. Students will be asked to maintain on-going enrollment in thesis supervision by signing up for at least one credit after the first semester of enrollment. A maximum of three credits count toward the degree.

Biology**BIO 570 Pathophysiology (3)**

Identify the physiological basis of common and specific health and disease states encountered in primary care nursing practice and distinguish those processes that are ongoing in the human body that can be altered by interventions from those that cannot.

Business**BLW 570 Business Law, Ethics, and Intellectual Property Rights (3)**

Designed to provide the student with the legal environment of business transactions including court structure and procedure, contracts, sales, commercial paper, secured financing, and property transactions. Covers the ethical aspects of business with particular emphasis to intellectual property (IP) rights as they relate to technology innovation and high technology environments. The IP issues which will be addressed include copyrights, patents, trademarks, software, domain names, licenses, royalties, and business processes.

BUS 505 Multinational Economics of Technology (3)

Managerial economics is the application of economic theory and methodology to decision-making problems encountered by public and private institutions in a multinational setting and within the framework of technology innovation. Emphasis is on the identification and selection of alternative means of obtaining given objectives as efficiently as possible. It is a special branch of economics bridging the gap between abstract theory and managerial practice. Areas of study will include managerial economics and economic theory, statistical and econometric applications, demand, supply, markets, costs, profits and government and business.

BUS 591 Independent Study (3)

Extensive study and research on a particular topic of student interest under the supervision of a faculty member. The student is required to submit a written proposal which includes a description of the project, its duration, educational goals, method of evaluation and number of credits to be earned.

BUS 595 MBA Internship (3)

Internship placements provide students with a field experience related to their academic preparation enabling them to apply classroom instruction to the work site. Students are placed with an organization related to their major and specific area of interest to work along with, and be proctored by, experienced professionals. These are opportunities that cannot be duplicated in the classroom environment and provide an excellent transition into the field.

Computer/Information Science**CSC 500 Discrete Structures (3)**

This course provides the mathematical tools which serve as a basis for the description and understanding of the major components of computer science. Topics include: sets, relations (binary, n-ary), relational algebra, functions, properties of relations, propositional and predicate calculus. The presentation of this and other material is based on its utility for describing and investigating the objects of study in computer science, e.g., abstract models of machines (finite state automata-deterministic, nondeterministic, pushdown stores-Turing Machines), of strings and languages, etc. Counting techniques, recurrence relations and algorithm analysis will be studied-algebraic structures (monoids, groups, etc.; Boolean Algebras, lattices) and mapping between them; operations on n-ary relations suitable for database design; fundamentals of the study of switching circuits; proof techniques and an introduction to proving program correctness, elements of graph theory; and an introduction to the study of fuzzy sets and systems. Cross listed with MAT 413.

CSC 501 Continuous Methods in Computer Science (3)

Basic techniques of numerical computation. Topics include: computer arithmetic and error control, solution of non-linear algebraic equations including some non-linear optimization, polynomial interpolations including splines, curve fitting, integration, and an introduction to differential equations. Emphasis will be on non-formal settings with a view toward applications.

CSC 502 Machine Structures (3)

Computers as a hierarchy of levels. Coverage includes digital logic, microprogramming, and conventional machine levels. Emphasis is given to those aspects of computer hardware that affect programming. Prerequisite: Permission of instructor.

CSC 503 Data Structures (3)

A study of data structures through programming assignments and then in a language independent setting. The levels of data description and their roles in data structure design are examined. Prerequisite: Permission of instructor.

CSC 504 Computational Methods in Linear Algebra (3)

Computational aspects of linear algebra including linear optimization models are explored. Topics include different algorithms for solution of sets of linear algebraic equations, the eigen-value problems, linear programming, clustering techniques, and software requirements. Prerequisite: Permission of instructor. Cross listed with CS 421.

CSC 507 Data Analysis

Selection and implementation of research strategies, including selection and application of proper statistical techniques using a personal computer as a research and decision-making tool. Students will attain proficiency in the use of a commercial statistical analysis package in the solution of quantitative research problems. Designed to support graduate programs in nursing administration and telecommunications; not intended for computer science graduate students.

CSC 511 Formal Methods in Programming (3)

Formalisms for program expression; data and control abstractions and their interrelation are considered. Advanced control constructs including backtracking and nondeterminism, concurrent programming, the effects of formal methods for program development. Major approaches and techniques for proving programs correct are described. Prerequisite: CSC 500; CSC 503; coursework in high-level languages.

CSC 512 Theory of Programming Languages (3)

A formal treatment of both programming languages (translation and compiler design concepts, formal semantics) and programming concepts; theoretical aspects of topics such as parsing and translation specifications

presented along with those based on consideration of programs as machine independent entities. Prerequisites: Discrete Structures; Data Structures; coursework in two high-level languages.

CSC 513 Compiler Construction (3)

An introduction to the major methods used in compiler implementation. The parsing methods of LL(k) and LR(k) are covered, as well as finite state methods of lexical analysis, symbol table construction, internal forms for a program, run time storage management for block structured languages, and an introduction to code optimization. Prerequisites: Discrete Structures and CSC 531.

CSC 515 Object-Oriented Software Development (3)

An exposition of current object-oriented software design methodologies. Topics covered include object modeling, component protocols, interaction and visibility graphs, class design and inheritance graphs, data dictionary design, object persistence, exception handling, application frameworks and design patterns. These general concepts are illustrated with examples from currently practice methods such as Booch, OMT and Fusion. General software engineering principles, including reusability, are also discussed. Prerequisites: CSC 500 and CSC 503, or equivalent.

CSC 516 Functional Software Development (3)

An exposition of the fundamental principles underlying the applicative programming paradigm. Topics covered include lambda and general calculi, techniques of functional programming, types in functional languages, correctness of functional programs, and parallelism. A survey of major functional languages is also provided, along with representative applications. Prerequisites: CSC 500 and CSC 503, or equivalent.

CSC 517 Software Engineering (3)

Techniques, tools, environments, and formal methods for software specification and design; verification of design correctness. Proofs of correctness; test planning; static and dynamic testing; symbolic execution; automated testing; verification and validation over the software life cycle; software metrics; software maintenance. Creation, analysis, and maintenance of architectures for software systems. Basic principles, patterns, and techniques. Quality attributes of the architecture are used to make a quantitative analysis. Prerequisite: A course in Data Structures or equivalent.

CSC 521 Analytical Models for Operating Systems (3)

Review of major concept areas of operating systems principles, including networks of operating system modules, pipelining, and parallelism; development of approaches and examination of the major models that have been used to study operating systems and the computer systems which they manage. Introduction to the fundamentals of queueing theory; Petri nets, dataflow diagrams, and other models of parallel behavior will be studied. Prerequisites: Discrete Structures, Probability and Statistics, Linear Algebra, Calculus.

CSC 522 Computer Networks and Distributed Processing (3)

A study of networks of interacting computers, including basic network topologies, equipment configurations, and local networks. The problems, rationales, and possible solutions for both distributed processing and distributed databases will be examined. Major national and international protocols will be presented. Prerequisite: Discrete Structures.

CSC 523 Parallel Computing & Computers (3)

Algorithms and programming for parallel programming environments. Application to several architectures, including: virtual parallel environments; tightly and loosely coupled multiprocessors; pipelined and array processors.

CSC 524 Real Time Systems (3)

An introduction to the problems, concepts, and techniques involved in computer systems which must interface with external devices. These include process control systems, computer systems embedded within aircraft or automobiles, and graphic systems. Areas will include data acquisition, analog-digital conversion, digital signal processing, and operating systems software for these systems. Prerequisites: Calculus, Linear Algebra.

CSC 525 Distributed Systems (3)

This course concerns distributed multiprocessor systems in their fullest scope. It considers both the functional and analytical structures of specialized processors performing portions of the same task, nonspecialized processors

with limited number of states sharing a common memory, and multicomputers geographically distributed but linked through a communications network. It provides a foundation to evaluate the economics and feasibility of distributed systems. Prerequisite: CSC 522.

CSC 531 Automata, Computability and Formal Languages (3)

The stress in this course is on formal models of computation and the development of students' skills in utilizing rigorous concepts and definitions in computing environments to analyze broad classes of problems situations. Classical concepts from theoretical computer science (such as state minimization, formal languages and their acceptors, and the theory of computable functions) will be reviewed and /or developed. Prerequisite: Discrete Structures.

CSC 532 Applied Combinatorics and Graph Theory (3)

A study of combinatorial and graphical techniques for complexity analysis including, generating functions, recurrence relations, Polya's theory of counting, planar directed and undirected graphs, and NP-complete problems. Applications of the techniques to analysis of algorithms in graph theory, and sorting and searching. Prerequisite: Discrete Structures.

CSC 533 Theory of Computation (3)

A survey of formal models for computation, providing the basis for a rigorous understanding of the capacities and the limitations of computing devices. Includes Turing Machines, partial recursive functions, recursive and recursively enumerable sets, the recursion theorem, abstract complexity theory, program schemes, and concrete complexity. Prerequisites: Discrete Structures, CSC 531 co-requisite.

CSC 534 Combinatorial Optimization (3)

A study of the class of algorithms for optimization of combinatorial structures. Complexity of problems such as linear programming and the traveling salesman problem. NP-completeness, approximation algorithms, worst-case and probabilistic analysis of algorithms, and local search. Prerequisite: Discrete Structures.

CSC 535 Error Correcting Codes (3)

An introduction to coding for reliable data storage and transmission. Topics include linear, BCH, Cyclic, Reed-Mueller, and Reed-Justensen codes; dual codes and their weight distribution; encoding and decoding algorithms. Prerequisites: Discrete Structures, Linear Algebra.

CSC 541 Information Storage and Access (3)

Review of database and database management concepts. Advanced data structures, file structures, databases, and processing systems for access and maintenance. For explicitly structured data, interactions among these structures, accessing patterns, and design of processing/access systems. Data administration processing system life cycle, system security. Prerequisite: Discrete Structures.

CSC 542 Information Systems Design (3)

Introduction to the formalization of the information systems design process. Concepts and theories relating to module design, module coupling, and module strength with emphasis on techniques for reducing a system's complexity. The course is intended to be especially useful for those working in a technically advanced information systems environment. Prerequisite: CSC 551.

CSC 543 Distributed Database Systems (3)

A consideration of the problems and opportunities inherent in distributed databases on a network computer system. Includes file allocation, directory systems, deadlock detection and prevention, synchronization, query optimization, and fault tolerance. Prerequisites: Discrete Structures, CSC 522, CSC 541 co-requisite.

CSC 544 Computer Graphics (3)

An introduction to modeling and rendering used in 3D computer generated imaging. Topics include: animation; parallel and perspective projections; geometric and viewing transformations; bicubic spline surfaces; color and shading models; hidden surface removal, and ray tracing. Prerequisite: Linear Algebra.

CSC 545 Logic Programming (3)

A study of the syntax, the declarative and procedural semantics of logic programs and an introduction to logic programming using the language PROLOG. Prerequisite: Discrete Structures.

CSC 546 Multimedia Information Processing (3)

Designed to explore current research issues related to multimedia information processing and management. Students will learn the conceptual bases of dealing with data/information and semi-structured data management. Major topics may include (but are not limited to) information retrieval models, video processing techniques for content analysis, pattern analysis techniques related to information retrieval, query formation and intelligent query processing. Successful completion of the course will help students to do research in the emerging areas of multimedia information processing. Prerequisites: Linear algebra and programming skill in C++, JAVA, C, or MATLAB.

CSC 551 Introduction to Systems Theory (3)

This course develops a conceptual basis and techniques for the study of systems and system properties useful in all areas of computer science. Some of the properties covered are: behavior, state, dynamics, organization, structure, hierarchy, feedback regulation and control, complexity, information, communication, and performance. The course also develops a number of examples and emphasizes the ability to use the abstract systems concepts to model and study information processing systems. Prerequisite: Discrete Structures.

CSC 552 Introduction to Information Theory (3)

Basic results of information theory with application to storage, compression, and transmission of data; entropy and entropy-based measures. Block and variable length codes, noiseless and noisy channels, channel capacity. Real and computer-simulated data studies to illustrate problems of statistical characterization of sources and channels. Prerequisites: Probability and Statistics, Linear Algebra, Calculus, Discrete Structures.

CSC 553 Data Security (3)

Theories and techniques for encrypting and decrypting stored and transmitted data. Topics include classical cryptographic methods, stream and block ciphers, public key systems, the Data Encryption Standard, automata-theoretic and shift-register models of security systems, analog security systems. Prerequisite: Discrete Structures.

CSC 554 Modeling and Simulation (3)

Discrete and continuous techniques for modeling and simulating complex systems. Model formulation; class of models; statistical simulation; simulation languages; model-based simulation; model stability, verification and interpretation; and decision support systems. Prerequisites: Probability and Statistics, Linear Algebra.

CSC 555 Models and Metrics for System Performance Evaluation (3)

Issues involved in developing quantitative indices of merit assessment. General framework and principles for systems evaluation; study of appropriate metrics for software systems, software development cycle, hardware-software complexes, command and control systems. Prerequisites: Probability and Statistics, CSC 551.

CSC 556 Pattern Recognition and Image Processing (3)

Design of automated and interactive classification systems. Feature extraction methods, linguistic and relational representation of objects, inductive inference, maximum likelihood decisions; measures of quality; transform methods, fast algorithms, image operations such as enhancement, smoothing, sharpening, windowing, filtering. Prerequisites: Discrete Structures, Linear Algebra, CSC 552.

CSC 557 Artificial Intelligence (3)

Survey of basic concepts and techniques of artificial intelligence. Knowledge representation, constraints and capabilities of different notational systems; search strategies; problem representation and problem solving methods; expert systems. Applications and illustrations from medicine, science, robotics, computer vision. Prerequisite: Discrete Structures.

CSC 558 Operations Research (3)

An introduction to the theory of linear programming, network analysis, dynamic programming and integer programming with emphasis on computer implementation. Prerequisites: Linear Algebra, Discrete Structures.

CSC 559 Fuzzy Sets and Systems (3)

A study of uncertainty, vagueness, and inexactness. This course presents: 1) a historical perspective; 2) fundamental principles of fuzzy logic, an extension to two-valued logic, and fuzzy systems theory; 3) application areas for uncertainty theory.

CSC 580 Computer and Robotic Vision (3)

This course is designed to give the student an insight into the intrinsic image information and the internal model of vision systems. Classification of objects is performed by extracting linear curves and regions in images, using boundary information, texture analysis and 3D scene analysis. Geometric and relationship structures involving complex symbolic descriptions of image and world structures are studied and various applications are introduced. Cross-listed with MST 580.

CSC 581 Seminar in Computer Science (3)

Students must choose from a list of topics and explore the literature, make formal presentations, and submit a final report on the topics. Prerequisites: Advanced graduate standing and permission of instructor.

CSC 585 Special Topics (variable credit)

Topics will vary from semester to semester. In-depth development of topics reflecting current research areas of faculty. Example topics: remote sensing, cartographic systems, models of the brain, modeling of sociotechnical systems, adaptive programming, optimization models and methods, decision theory and decision support systems, mathematical systems theory, fuzzy systems and fuzzy programming, high-level computer architecture, legal issues in computing.

CSC 591 Independent Study (Variable 1-3)**CSC 598 Project (3)****CSC 599 Thesis (Variable 1-6)****CSC 600 Colloquia in Computer Science (3)**

Speakers from fields in computing and its applications present their current research activities and findings. Students are required to attend a designed number of colloquia each semester and to write reaction papers to those presentations in areas of their interest. May be taken repeatedly, but it does not count toward the 33 credit hour requirement for the M.S. degree.

Continuous Registration**CMT 600 Continuous Registration (1)**

Maintaining continuous registration is a requirement for all graduate degrees. Students who have completed most course requirements but are finishing projects, capstone experiences, thesis or are satisfying Incomplete or In-Progress grades must register to maintain continuous matriculation. Course may be taken up to 6 semesters at which time it is expected that all program requirements will have been met. Credit is not used toward program completion requirements. Only S/U grades are awarded for this course.

Finance**FIN 525 Financial Management Problems (3)**

Provides the student with in-depth experience with the subject of Business and Corporation Finance for their future development as practicing executives. Students solve cases and problems faced by financial managers in the real world, that focus on major financial decisions and such current issues as corporate governance, securities issuance, globalization, privatization, financial analysis and planning, capital budgeting, capital structure, cost of capital, valuation, dividend policy, short/long term financing, financial markets, firm performance, and corporate restructuring. Prerequisites: FIN 302/FIN 502 or equivalent.

FIN 532 Investment Strategy (3)

Introduces current technological trends market microstructure, and strategies for investment management in the financial market. Topics include (1) stock/securities market structure, (2) risk-return tradeoffs on instruments, (3) auction, negotiation, online trading mechanisms, (4) mutual fund investments, (5) asset pricing and valuation theory, (6) security/industry/company analysis, (7) stock market/equity/technical/financial statement analysis, (8) capital market theory, and (9) combining stocks with other alternative investments, and (10) portfolio management. Prerequisite: FIN 525.

FIN 685 Seminar in Accounting & Finance (3)

An integrating experience to apply the varied skills and knowledge accumulated through the required course work to make the student competitive in capital markets. Special emphasis will be upon mastery of body of accounting and financial knowledge including significant current development on the economic and financial scene. Students acquire greater

understanding of global capital markets, demonstrate the ability to use the tools and techniques of accounting and investment analysis in the valuation of assets, and provide a synthesis of all previous related course work. Prerequisites: ACC 520 and FIN 525.

Health Information Management

HIM 501 Health Care Informatics (3)

The theoretical basis of health care informatics and health information systems is presented and the use of technology to deliver health care is explored. Study of the impact of informatics on the socio-cultural environment of health care and the infrastructure to support health care informatics is a primary focus.

Health Services Administration

HSM 500 Health Care Systems (3)

Health care delivery in the United States is a dynamic, evolving and extremely complex system comprised of myriad providers and payers. The system is further complicated by significant government involvement in both delivery and payment. It is also important for the health professional to understand the biostatistics that measure a population's health; and the utilization statistics that measure its use of health care. This course will address the multiple components of the health care delivery system, the rationale for its' patterns and practices and the basic statistics necessary to access and measure its utilization.

HSM 501 Health Policy (3)

Addresses several major health policy issues confronting public and private policy makers. It is multidisciplinary in its approach in that the analysis incorporates economic, managerial, financial, ethical, demographic, and political perspectives of health policy. Students select, analyze and resolve a public policy problem; lead discussions on policy problems in cases and determine how they will be 'policy competent' in their chosen field upon course completion.

HSM 505 Health Economics (3)

Uses an economic framework to examine major components of the health care system. Topics covered include the principles of microeconomics and regression analysis, the production of health, the demand for medical care (consumer behavior), the theory of health insurance, the market for physician services, and the market for hospital services. Students will complete a major research paper on a health economics-related topic.

HSM 509 Legal Issues in Health Care (3)

Exploration of legal issues that affect the operation of health care facilities. Topics covered include medical malpractice, licensure, staff privileges, federal/state regulatory mechanisms, health organization liability, risk management, decisions at the end of life and obligations to patients and the community. Preventative measures will be examined that minimize risks to health, safety, and the environment. A special emphasis will be on legal issues that improve operational performance and regulatory compliance.

HSM 510 Alternative Methods of Health Care Delivery (3)

Alternative Methods of Health Care Delivery provides a framework for understanding the meaning of the term "alternative health care delivery" and explores applicable methods from several health care arenas including the evolution of managed care, the expansion of alternative and complementary medicine modalities into mainstream medicine and the international health care scene. The course presents theories, principles and methods for investigating, evaluating and conducting business using the discussed methods of health care delivery. It is designed to introduce students as current and future health care administrators to the concepts and dynamics of alternative health care delivery methods as a basis for monitoring organizational, legislative and reimbursement changes – be it in acute care, long term care, physician practice management or some similar field. Prerequisite: HSM 500.

HSM 522 Nursing Home Administration (3)

Aging of the United States population has expanded the need for long-term care services. This course will examine the nursing home as an integral part of the long-term continuum. This course is intended to provide the foundation necessary for students preparing for an internship and subsequent careers as nursing home administrator.

HSM 525 Health Care Marketing/Strategic Planning (3)

Decision-making, relative to facility planning and financial integrity, has become extremely complex in the health care field. Health care marketing is one of the tools available to the health professional that provides guidance and support to these efforts. This course will address many of the planning and marketing variables that should be addressed, as well as how to coordinate these activities. Prerequisites: HSM 500 and HSM 535.

HSM 531 Financial Management for Ambulatory Care Facilities (3)

A course designed to assist the health care executive understand various financial issues in dealing with managed care organizations. Specifically, the course will focus on financial reimbursement issues which executives must understand to provide strategic financial and operational direction to their organizations, risk shifting via capitation methodologies, risk contracting issues, and various cost accounting methodologies to adequately prepare for negotiating managed care contracts.

HSM 535 Financial Management for Health Care Organizations (3)

Students will acquire a working knowledge of cash flow projections, budgeting, cost accounting and control evaluation techniques for not-for-profit organizations. Case study analysis and presentations will be the primary instructional methods. Students will learn to use an electronic spreadsheet to assist in analyzing case studies. An extensive accounting case analysis problem involving a not-for-profit entity will be assigned. Students will be required to submit an in-depth written report, which will reflect this organization's financial viability. Prerequisites: HSM 500 and ACC 201 or its equivalent.

HSM 592 Special Topics in Health Services Management (Variable 1-3)

A study of a selected topic of interest to students interested in the field of health care administration, which will enhance the student's ability to work in the health care field. Topics may be repeated in future semesters or may change from semester to semester. Grading method will vary depending upon topic.

HSM 680 Research Methods for Health Services Administration (3)

Covers conceptualization of health services research, statistical modeling, sampling, techniques, research design, data collection, literature review, and ethical issues in health services research. Students will complete a research design proposal which addresses a health services research problem. Prerequisite: MGS 511 or MBA statistics course.

HSM 685 Health Services Administration Environments and Strategies (3)

Provides students with the theoretical framework and background to analyze the environment in which health care organizations operate and to determine how organizations in the health care sector develop and implement strategies to achieve short term and long term goals. Strategic management theory is used to integrate knowledge across functional areas of management. Students complete a major strategic management project for a health care organization in the community. Prerequisites: HSM 501 and HSM 525 and HSM 535; minimum cumulative GPA of 3.0; or permission of instructor. (Note: Students must obtain a grade of B or better in this course to be eligible to graduate. The course may only be repeated once.)

HSM 692 Internship (Variable 3-9)

Internship placements provide students with a field experience related to their academic preparation enabling them to apply classroom instruction to the work site. Students are placed with an organization related to their major and specific area of interest to work along with, and be proctored by experienced professionals. These are opportunities that cannot be duplicated in the classroom environment and provide an excellent transition into the field. Prerequisite: Permission of Program Director.

HSM 699 Thesis in Health Services Administration (3)

The thesis option in health services administration requires that a student integrate knowledge and expertise developed in the specialized core curriculum. Students will develop a paper that addresses a convincing research question in the health care field, and is supported with primary and/or secondary data. Topics might include improving the delivery health care services to a subgroup of the population, or advancing health services delivery in an organization or a geographic region. Prerequisite: permission of instructor and the completion of statistics and research methods coursework.

Human Resource Management

HRM 518 Human Resource Management (3)

Manage human resources more effectively improving analysis and planning. Focus on the development of state-of-the-art systems which support basic business objectives, as well as foster good working relations between employees and managers.

HRM 615 Labor Relations (3)

A complete understanding of the history and development of labor management relations is critical for managers in both union and non-union organizations. Places special emphasis on the behavioral and economic underpinnings which set the stage for labor management relations in today's work settings. The structure, process and institutional framework within which these relations occur are also studied. Prerequisite: HRM 518.

HRM 620 Compensation (3)

Often referred to as one of the most important elements of the work place environment, the subject of compensation is examined in this course across a broad spectrum. Current theories, models and concepts are presented and analyzed in an effort to provide the basis for development of an equitable and effective pay system. Key topics included are motivation theory, performance appraisal, legal bases for pay and internal and external pay equity. Prerequisite: HRM 518. Cross listed with MGT 320.

HRM 650 Human Resource Information Systems (3)

The need to integrate human resource management with the overall stream of strategic decisions and techniques demands the support of a current and responsive human resource information system. Although the course recognizes that human resource information systems can run the gamut from paper and pencil manual systems to the most sophisticated mainframe systems, the emphasis is on microcomputer applications to which the student will be able to relate based on the comprehensive course curriculum. Concepts developed in the course focus on bridging the needs of the most senior executives in an organization with those of the operating personnel manager. Prerequisite: HRM 518.

Information Design & Technology

IDT 501 Information Theory (3)

Examines the role of theory in effective communication and information design. Explores theoretical approaches and practices from several disciplines (communication, cognitive science, instructional design). Applies front-end analysis and information design strategies and practices. Students work on communication and design problems from instructional environments, business, or government, and present their findings orally, visually, and in writing.

IDT 503 Human Factors in Information Design (3)

Provides students with theoretical frameworks and background needed to analyze the relationship between computer environments and the people who use them. The factors that relate to the design and use of instructional media will be considered. Factors as diverse as ergonomics, software screen design, readability, usability, web testing, and user-centered and contextual analysis will be considered to optimize the effectiveness of information design and instructional media. Students will develop and build an interface designed to carry out a sequence of well-defined tasks based on user/system requirements and project methodology guidelines and research information.

IDT 505 Computing Environments (3)

An introduction to computer operating systems and computer networks for communication specialists. Contemporary operating systems will be examined including installation, the user interface, simple troubleshooting, networking and internetworking. Network design, architectures, administration, and support will be considered within the context of a variety of professional environments.

IDT 507 Information Technologies (3)

Assesses the development and social impact of information and communication technologies. Focuses on emerging technologies of the 21st century and the convergence of traditional with new media. Examines the technical features and characteristics of information and communication technologies, and assesses the evidence for significant social impact associated with their diffusion.

IDT 531 Technical Editing (3)

Focuses on editing in the context of rhetorical theory, analyzing the strategies and purposes of editing for various documents and audiences. Emphasis falls on the editor as supervisor and manager who must understand the design and production process of complete documents. A major component of the course addresses the skills and issues of editing for on-line communication and publication. Cross listed with COM 310.

IDT 534 Information Design (3)

Explores the theoretical and practical use of graphics as a form of visual communication. Topics include visual perception and forms, design theory, chart and graph theory, relationships between formatted text and graphics, and color and design concepts. Students will apply theory to the design of visuals in communication.

IDT 535 Typographic Design and Communication (3)

Investigates typographic variables and methods of organization. Verbal, visual and vocal message-making is explored through the marriage of meaning and form. This facilitates the development of an aesthetic vocabulary combined with an increased sensitivity to language. Issues of hierarchy, readability, and syntax will be examined through a series of projects. The assignments range from realistic, client-based problems to highly abstract, heuristic exercises.

IDT 536 Graphic Design (3)

An advanced exploration of the theoretical and practical application of consumer, trade and public service graphic design. Students will study the contemporary history and evolution of advertising's use of graphics as a means of visual communication. Students will create at least seven promotional pieces with emphasis on presentation and professional work. An introduction to the theory of computer-based imaging and the exploration of a variety of hands-on techniques pertaining to design creation, manipulation, and construction. Students should have a general understanding of Adobe Photoshop, Adobe Illustrator, and Adobe In Design.

IDT 541 Instructional Design (3)

Students will learn about the fundamentals of instructional design, its variations and impact on learning outcomes. Several contemporary ID models will be examined. Students will ultimately adopt a personal approach to instructional design.

IDT 545 Information Technology and Organizational Change (3)

Examines the theoretical framework of change theory and research in various fields and issues facing individuals or institutions engaged in change. Students will discuss the elements of the change process, the roles of participants in the process and implications for change agents or agencies. Students will apply knowledge of diffusion and diffusion research to a planned, ongoing or past diffusion effort, preparing recommendations or post-mortem analysis of the process. Desirability and unintended consequences of innovations will also be discussed. Non-matriculated students need permission of dean to enroll.

IDT 551 Evaluating Technology (3)

Addresses issues that information technology professionals face in selecting technology (both hardware and software) to meet desired goals. Topics include technology classification, evaluation criteria and software and hardware considerations, including the Internet and intranets. Will examine how information is shaped and modified by the technologies that are selected.

IDT 553 Principles of Design for Desktop and Electronic Publishing (3)

An advanced consideration of communication theory as it relates to visual language and the ways designers use and readers process such information. Analyzes the strengths and limits of various media and applies design principles applicable to each medium and to the integration of visuals with language and sound. Students analyze and evaluate selected readings and examples and use publishing techniques to design and produce printed material and they design a Web site.

IDT 554 Advanced Web Development and Design (3)

Considers advanced aspects of web system design and development. Issues covered include server-site application development, client-side application development, and web graphics. The user-machine interaction will be considered with a focus on user interface design principles, guidelines and standards. The advantages and disadvantages of various graphical user interfaces and object-oriented user interfaces will be discussed.

IDT 555 Ethical and Legal Issues of the Information Age (3)

Analyzes ethical and legal issues related to information technologies. Examines the ways that technology challenges traditional ethical and legal concepts and raises old issues in new ways. Topics reflect recent patterns and developments, with particular emphasis on how technological developments shape, and are shaped by, the economic and political structure and organization of communication systems. Examines the role ethical and legal factors play in the day-to-day work of designers, producers and consumers using a series of contemporary issues as case studies.

IDT 585 Seminar in Emerging Information Technologies (3)

Takes an in-depth look at emerging technologies including but not limited to multimedia, distance learning, networking and the Internet. Reviews technical, social, economic and political factors associated with new and emerging information technologies. Examines trends in the development and diffusion of emerging information technologies. Explores, through practical application, use of emerging information technologies in educational settings.

IDT 590 Selected Topics in Information Design and Technology (3)

Provides students with the opportunity to investigate selected topics in information and design technology. Topics will typically illustrate the application of theory and research. Students may receive credit in a future semester for different topic areas.

IDT 591 Independent Study (Variable 1-3)**IDT 592 Internship (3)**

Application of theory to real-life situations through placement in an appropriate work-related setting. Requires completion of assigned projects under the joint supervision of a faculty member and a professional supervisor. Prerequisite: Faculty will determine on a case-by-case basis if student is adequately prepared for an internship. The student will be required to make a proposal for an internship and IDT faculty will review each request.

IDT 599 Thesis/Project (3)

Students complete an in-depth quantitative or qualitative empirical study of a topic chosen by the student from the area of information design and technology. Students will work individually on projects and will act as a resource for other students working on their thesis, reviewing their work, offering comments and suggestions, and sharing ideas. At the completion of the course, students will present their final paper to the college community. This is a capstone course for students who are close to graduation in Information Design and Technology. Students must have already taken or are currently taking a research methods course. They should take the course after taking all core courses. Permission of the instructor is required for admission to the class.

Management**MGT 607 Organizational and Management Theory (3)**

Analyze major schools of management thought: traditional, behavioral, and contingency. Explore managerial roles, power styles, and conflict with respect to contemporary organizational systems through lecture, discussion, case analysis, and experiential exercises.

Management Information Systems**MIS 515 Management Information Systems (3)**

Strategic uses of information that affect customers, markets, and products are becoming common today. Information is used to manage organizations, carry out strategy, control operations, and assist in decision-making. As a result, information is a resource with value equal to that of traditional assets such as inventory, capital, and human skills. In this course students will learn to manage and use information systems and technology. The MIS course provides concepts, methods, and techniques to identify an organization's information needs and to employ systems to meet these needs. The course introduces business students to topics such as information systems, database management, information technology, expert systems, and decision support systems. [Formally BUS 515]

MIS 615 E-Commerce and Entrepreneurship (3)

E-Commerce provides entrepreneurs with a vast, evolving medium for engaging in all phases of business activity. New business opportunities are evolving with the introduction of new technological developments. Students will study such evolving trends, learn about existing standards and methods

to analyze web-based activity, and develop Web business strategies for launching their own business activities on the Internet.

Management Science**MGS 511 Quantitative Business Analysis (3)**

This survey course addresses the study of the scientific method as applied to management decisions. The forepart of this course addresses the development of basic statistics up to hypothesis testing. Topics coverage also includes (1) bivariate regression analysis, (2) multiple regression analysis, (3) PERT and CPM, (4) linear programming (graphic method only), (5) decision making under uncertainty (including maxi-max, mini-max, and maxi-min techniques) and (6) the basic elements of forecasting (including the classical time series model).

Marketing**MKT 505 Marketing Management (3)**

Emphasizes a managerial approach in marketing decision making in the modern technology environment. Topics in this course include the marketing mix, marketing problem solving through case analysis, marketing strategy concepts and tools, and development of a strategic marketing plan. Students learn these topics and many other relative subjects through teamwork and course projects.

MKT 510 Marketing Survey Design and Data Analysis (3)

Provide prospective managers with an understanding of marketing survey procedures and data analysis techniques. Various quantitative and strategic approaches in marketing are introduced and applied in case studies and problem solving. Topics of this course include: formulation of marketing survey design, comparison of survey designs, preparation of marketing data, quantitative techniques of marketing decision analysis, managerial aspects of coordinating survey projects, and the implementation of derived strategy. Prerequisite: MKT 505.

MKT 652 Sales Management (3)

Presents the techniques for delivery of effective selling in business-to-business situations and explores the components necessary to achieve effective management of the sales function. Included within this presentation is exploration of the sales function, the duties and necessary skill set for effective B2B selling, training, and selection decisions in sales management, the role of negotiation and forecasting in sales management, and ethical and legal issues confronted in the B2B sales environment. Prerequisite: MKT 505.

MKT 654 Services Marketing Management (3)

Introduces students to the challenges and innovative strategies that are ubiquitous to the marketing of services. Topics covered in this course include commonalities and differences between goods and services, the critical role of customer contact employees in service delivery, customer relationship management, the design and execution of the service delivery process, measurement and management of service outcomes, and the emerging roles of globalization and technology in service provision. Prerequisite: MKT 505.

Mathematics**MAT 500 Topics in Applied Mathematics (3)**

This course will introduce students to several topics in the area of mathematical methods. Topics include: complex numbers, determinants and matrices, ordinary differential equations, Fourier series, partial differentiation, multiple integrals and vector analysis. Prerequisite: Calculus II (MAT 122) or equivalent.

MAT 530 Number Theory and Its Applications (3)

Introductory course in Number Theory that will introduce students to the basic concepts as well as some modern applications. Topics include: prime numbers, Greatest Common Divisors, The Euclidean Algorithm, congruences, Fermat's Little Theorem, primality testing, etc. Applications of Number theory: cryptography, pseudorandom numbers, etc. Prerequisites: MAT 380 or MAT 381 or MAT 413 or permission of instructor. Cross listed with MAT 430.

Nursing

NUR 500 Theoretical Foundations for Nursing Practice (3)

Historical influences that have impacted upon the development of nursing are explored. Theory-based nursing is emphasized as students discuss and critically reflect upon the relevance and significance of nursing as an art and science. Philosophical views of selected nurse theorists and their theories are critically examined for application to nursing practice, administration, and research. Nursing theory within the paradigm of people, health, nursing, environment, are applied to the practice of nursing and promotion of health, research, moral reasoning, and standards of professional nursing. Personal philosophies of nursing are explored and drawn from these theories as students critically reflect upon their personal values and transforming practice in the advanced practice role of professional nursing.

NUR 501 Health Policy (3)

Federal and state governments, as well as many health care organizations, engage in ongoing and significant decision-making which will determine the course of health care. The purpose of this course is to present the process, intent, and consequences of policy. Past, present, and potential policy decisions will be studied.

NUR 503 Advanced Nursing, Health Policy, and the Health System (3)

Students learn to evaluate and integrate power, management, and leadership theories in the implementation of advanced nursing practice for culturally diverse communities, families, and individuals within the health care delivery system. Essential tools to facilitate the development of strategies to impact on health care policies and quality management are discussed. The historical and current role of the caring and learned profession of nursing is explored. Trends in the macrosystem are critically evaluated for their political and social impact on health care delivery systems and the environment. Political implications and the action of the advanced nurse as clinician, administrator, leader, manager, change agent, and consultant are analyzed and researched. The central focus is the development of advanced professional practice.

NUR 504A Advancing Leadership in Health Care (4)

Designed for the accelerated RN to BS/MS programs of study, students learn to evaluate and integrate power, management, and leadership theories in the implementation of advanced nursing practice for culturally diverse communities, families, and individuals within the microsystem of the healthcare institution and the macrosystem of health care delivery. Essential tools to facilitate the development of strategies to impact on health care policies and quality management are discussed. The historical and current role of the caring and learned profession of nursing is explored. System trends are critically evaluated for their political and social impact on health care delivery systems and the environment. Political implications and the action of the advanced nurse as clinician, administrator, leader, manager, change agent, and consultant are analyzed and researched. The central focus is the development of advanced professional practice. Prerequisites: Matriculated into the Accelerated BS/MS program; completion of 300 and 400 level nursing courses.

NUR 514 Health Assessment (2)

Complete health assessment is explored through seminar discussion and laboratory practice. Content focuses on the acquisition of assessment skills of the healthy and ill individual. Prerequisite: Undergraduate health assessment course; registered nurse. (Note: this course will act as a refresher course for those registered nurses whose undergraduate health assessment course was greater than five years ago.)

NUR 522 Financial Management for Nurses (3)*

Utilizing basic principles of health care economics for fiscal management and budgeting, the nurse administration student examines budgets and budgeting, reimbursement and regulation, strategic planning and monitoring, forecasting and decision making, management information systems, and business plans. Utilization of these principles are then applied to the development of patient service financial plan and/or budget. Pre/Co-Requisites: Microsoft Excel.

NUR 524 Program Planning and Development (2)

Program planning provides a concise, practical approach to planning, managing, and evaluating health programs within an acute or community based health care delivery system. A variety of theoretical and health system

models are applied to program planning. The program planning process is presented with illustrations of how this process provides fiscally sound, sustainable change in a variety of practice environments.

NUR 526 Legal and Regulatory Issues in Health Care (3)*

Legal/regulatory issues that impact the advanced professional practice of nursing administration are examined. The student explores the origins of law and the judicial system to appreciate the various legal aspects of the health care delivery system, including state codes, nurse practice acts, licensure, disciplinary bodies, civil liability, malpractice, and other relevant areas, such as ethical codes and standards of practice on nursing and health care.

NUR 531 Family Theory (2)

Family theories are explored using research from a multidisciplinary and culturally diverse approach. A variety of assessment techniques and instruments are introduced and applied to identify family health status, risks, and problems. It provides a theoretical foundation in assessment and planning for family intervention.

NUR 535 Curriculum Development in Nursing Education (3)

Curriculum development addresses the many interpretations of curriculum and curriculum design and their meaning within diverse educational settings. Intellectual traditionalist, social behaviorist, and experientialist approaches are explored as they apply to the curriculum process and learner. Modes of inquiry and domains of learning are presented as orientation models for curriculum consideration and development. Discussion of issues relevant to education and curriculum are also explored. Educational self analysis through accreditation processes and educational standards are examined as they relate to curriculum development.

NUR 541 Nursing Leadership Institute: Key Competencies in Long Term Care (3)

Management processes within nursing in long term care will be examined. The students' knowledge, skill, and disposition are developed by examining the role of the long term care nurse administrator in relation to strategies utilized for professional practice, effective leadership, critical thinking, regulatory oversight, and human resource management. Prerequisite: Permission of instructor.

NUR 545 Instructional Designs in Nursing Education (3)

Instructional designs and the application to teaching strategies are presented in this course. Individual versus team approaches are discussed. Prescriptive models such as behaviorists and objectivists; and phenomenological models such as cognitivist, constructivist, and post modern approaches are examined. Attention to technology using discovery learning with simulations and distance education through web-enhanced instruction are demonstrated and applied to student learning.

NUR 555 Clinical Pharmacology (3)

Pharmacology and therapeutics for primary, acute and long-term care patients are emphasized with the focus on the clinical application of the major classifications of drugs. Disorders, symptoms and diseases affecting people throughout the lifespan are examined from a comprehensive pharmacological management perspective. The legal parameters for prescription writing and protocols are included. Theory and research findings related to current treatment modalities and the complexities of compliance are applied.

NUR 560 Nursing Research Methods (3)

The research process for quantitative and qualitative research studies is critically examined. The methods of scientific inquiry, problem identification, use of underlying theories and conceptual methods, research design, measurement, data collection and analysis, and ethical considerations are applied to the development of a research proposal. Critical analysis of existing research studies and student reports are used to further refine the development of research skills. The significance of research findings to practice environments in health care systems, administration, and ongoing research activities are identified as they relate to evidence based practice in nursing. Critical reflection upon one's developing role as a professional in advanced practice is explored as it relates to participation and collaboration in research activities within health care systems and communities.

NUR 566 Advanced Practice Nursing Lecture (3)

Health assessment will focus on the caring and in-depth assessment expertise needed by nurse practitioners: history taking; communication; physical

and mental examination; psychological, cultural, and social assessment. Advanced assessment skills needed to develop clinical problem solving, critical reflection, and decision making will be discussed. Knowledge from the behavioral and health sciences, nursing theory, and research will be drawn upon to assist the student in formulating therapeutic interventions that will promote, maintain, or restore health for people and communities. Prerequisites: Matriculated status and undergraduate health assessment course within the past 5 years or NUR 514. Pre/Corequisites: NUR 500, BIO 570, and for family nurse practitioner majors NUR 531. Corequisite: NUR 567.

NUR 567 Advanced Practice Nursing Clinical (2)

Data about the assessment, diagnosis, management, and evaluation of common and simple problems facing client populations will be explored through clinical experiences and computer simulations. Students will master advanced assessment skills needed to develop critical reflection and decision making and will demonstrate their clinical and decision making expertise in on-campus laboratory experiences and in faculty supervised clinical experiences in communities of culturally diverse people. Prerequisite to the faculty supervised clinical experiences: current New York Registered Professional Nurse license, CPR certification, complete health clearance on file. Corequisite: NUR 566.

NUR 570 Clinical Pathophysiology (3)

Identify the physiological basis of common and specific health and disease states encountered in primary care nursing practice and distinguish those processes that are ongoing in the human body that can be altered by interventions from those that cannot. Prerequisite: Undergraduate anatomy and physiology or permission of instructor.

NUR 572 Family Health Promotion and Disease Prevention Across the Lifespan (3)

Health promotion and disease prevention concepts are applied to individual and community based interventions grounded in theories of growth and development, epidemiology, and social policies that influence the achievement of health. The promotion of health, prevention of illness and identification of the factors that influence risk education, self care and healthy lifestyle choices across the health illness continuum of individual clients and the community are emphasized. Opportunities to critically reflect on the roles of the nurse practitioner as case manager, educator and collaborator are explored to enhance the health and well being of clients and their families from a variety of social and cultural backgrounds to ensure the delivery of appropriate, individualized health care. Prerequisites: NUR 500, NUR 566, NUR 567, and BIO 570. Pre/Corequisites: NUR 555, NUR 560, NUR 531, NUR 580.

NUR 574 Adult Health Promotion and Disease Prevention Across the Lifespan (2)

Health promotion and disease prevention concepts are applied to individual and community based interventions grounded in theories of growth and development, epidemiology, and social policies that influence the achievement of health. The promotion of health, prevention of illness and identification of the factors that influence risk reduction, self care and healthy life style choices across the health illness continuum of individual clients and the community are emphasized. Opportunities to critically reflect on the roles of the nurse practitioner as case manager, educator and collaborator are explored to enhance the health and well being of clients and their families from a variety of social and cultural backgrounds to ensure the delivery of appropriate, individualized health care. Prerequisites: NUR 500, NUR 566, NUR 567, and BIO 570. Pre/Corequisites: NUR 555, NUR 560, NUR 582.

NUR 576 Foundations for Gerontological Health Promotion and Disease Prevention (3)

Health promotion and disease prevention concepts are applied to the older adult using both individual and community based interventions that are grounded in theories of growth and development, epidemiology, and social policies that influence the achievement of health. The promotion of health, prevention of illness, and identification of the factors that influence risk reduction, self care, and healthy life style choices across the health illness continuum of older adult clients and the community are emphasized. Opportunities to critically reflect on the roles of the nurse practitioner as case manager, educator and collaborator are explored to enhance the health and well being of clients and their families. Ethical and legal issues as well as social and cultural factors are explored to ensure the delivery

of appropriate, individualized health care. Prerequisites: NUR 500, NUR 566, NUR 567, BIO 570. Pre/Corequisites: NUR 555, NUR 560, NUR 531, NUR 584.

NUR 580 Beginning Level Family Clinical (2)

Clinical experience provides an opportunity to deliver primary care within a community based setting to a population with a variety of cross-cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to clients provide the students with challenges to expand their knowledge and skills. The focus of this clinical is to become proficient in obtaining histories and performing physical exams in the clinical setting with minimal supervision. The information obtained needs to be accurately documented utilizing SOAP format. Clinical faculty, in association with preceptors (physicians and/or nurse practitioners), provide guidance in the clinical setting under contract with the School of Nursing and Health Systems. The student will complete 5.5 contact hours per week per credit. Prerequisites: Current New York Registered Professional Nurse license, current CPR certification, complete health clearance on file, NUR 566 and NUR 567. Pre/Corequisites: NUR 555, NUR 560, NUR 572.

NUR 582 Beginning Level Adult Clinical (2)

Clinical experience provides an opportunity to deliver primary care within a community based setting to a population with a variety of cross-cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to clients provide the students with challenges to expand their knowledge and skills. The focus of this clinical is to become proficient in obtaining histories and performing physical exams in the clinical setting with minimal supervision. The information obtained needs to be accurately documented utilizing SOAP format. Clinical faculty, in association with preceptors (physicians and/or nurse practitioners), provide guidance in the clinical setting under contract with the School of Nursing and Health Systems. The student will complete 5.5 contact hours per week per credit. Prerequisites: Current New York Registered Professional Nurse license, current CPR certification, complete health clearance on file, NUR 566 and NUR 567. Pre/Corequisites: NUR 555, NUR 560, NUR 574.

NUR 584 Beginning Level Gerontological Clinical (2)

Clinical experience provides an opportunity to deliver primary care within a community based setting to the older adult population with a variety of cross-cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by older adult clients in diverse health care settings. Opportunities to deliver primary care to clients provide the students with challenges to expand their knowledge and skills. The focus of this clinical is to become proficient in obtaining histories and performing physical exams in the clinical setting with minimal supervision. The information obtained needs to be accurately documented utilizing SOAP format. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide guidance in the clinical setting under contract with the School of Nursing and Health Systems. The student will complete 5.5 contact hours per week per credit. Prerequisites: NUR 566, NUR 567, current NYS RN license, current CPR certification, current complete health clearance on file in the SON&HS office. Corequisites: NUR 555, NUR 560, NUR 576.

NUR 591 Independent Study (Variable credit)

NUR 608 Health Care Systems Seminar (3)*

Administrative systems issues within the health care environment are examined. Knowledge, skill and disposition are developed by analyzing economic, regulatory, and information systems within the health care micro-systems environment. Opportunities are created to critically reflect and analyze the impact of application of health care systems on resource utilization, performance improvement, information-handling and achievement of strategic outcomes. Prerequisites: NUR 500, NUR 503 or NUR 504A, NUR 560, MGT 607, HIM 501, matriculated status, current New York Registered Professional Nurse license. Pre/Corequisites: NUR 522, NUR 526, HRM 518, CSC 507.

NUR 610 Nursing Administration Seminar (3)

Administrative issues within nursing and the health care environment are examined. Knowledge, skill, and disposition are developed by examining the role of the nurse administrator in relation to strategies utilized for advanced professional practice. Opportunities are created to critically

reflect on effective approaches necessary for effective leadership, change management, quality improvement, conflict resolution, and resource utilization in culturally diverse environments. Prerequisites: NUR 500, NUR 503/NUR 504A, NUR 560, MGT 607; matriculation status, current New York Registered Professional Nurse license. Pre/Corequisites: NUR 522, NUR 524, NUR 526, HRM 518, CSC 507.

NUR 611 Nursing Administration Internship (3)

In partnership with a nurse administrator, management and leadership principles are applied in this culminating experience. The role of the nurse administrator is assessed and analyzed in relation to professional practice, effective leadership, change management, evaluation of the quality and effectiveness of nursing practice, policy development, and resource utilization. The practicum provides the student the opportunity for critical reflection on the advanced practice role in nursing administration. Synthesis of management and leadership theoretical principles, practice guidelines, and pertinent research are emphasized. Occasions exist to demonstrate knowledge, skill, and disposition in administrative practice through the development and implementation of the practicum objectives. Within the framework of the objectives, each student designs, implements, and evaluates an administrative project. Prerequisites: Matriculated status, current New York State Professional Nurse license, current CPR certification, complete health clearance on file. Pre/Corequisite: NUR 524, NUR 608, NUR 610, NUR 624.

NUR 624 Grant Proposal Seminar (3)

Selection of potential research and project proposals are critically explored for funding. Identification of funding sources and the development of a grant proposal for submission to a potential funding agency is emphasized. Faculty facilitation and seminar provide an interactive learning environment for students to present their proposals in progress and to obtain critical reviews of their work from all participants. Focus is on the ongoing development of critical analyses skills, participation in scholarly exchanges of ideas, and research utilization within nursing administration. Prerequisites: NUR 500, NUR 560, or permission of the dean.

NUR 626 Thesis or Project (Variable 1-3)

Student has the option of implementing an approved research or project proposal for up to 3 credits. Prerequisites: NUR 500, CSC 507, NUR 560.

NUR 627 Culminating Seminar for Nurse Administrators (2)*

The synthesis of health care related theory, research and practice are the emphasis of this culminating experience. Opportunity for collaboration with peers, faculty and mentors is provided as students develop and participate in research and scholarly activities. Inquiry into scholarly works is explored to further enhance nursing knowledge, applied research in health care delivery, and professional practice. Personal values and beliefs are re-examined as the student describes one's transformed view of self and advanced practice as a maturing professional in nursing. Critical reflection of one's personal growth and commitment to ongoing professional development is examined within the context of developing professional excellence. Pre/Corequisites: NUR 611, NUR 624; Student must be within 3 credits of graduation at completion of culminating seminar.

NUR 635 Evaluation Approaches in Nursing Education (3)

A foundation for formative and summative evaluation approaches is presented in this course. The focus is on types of evaluation models that address problems, needs, and assessment plans; processes for implementing plans; outcome-based evaluation; performance assessment system; stakeholder participation; and strategic planning relevant to program and curriculum evaluation. Benchmarking, accreditation standards, and evaluation concepts are explored within the context of nursing, in-service, and education. Assessment trends and issues facing nurse educators in practice and educational settings are also examined. Prerequisites: NUR 535, NUR 545. Pre/corequisites: PSY 570.

NUR 645 Culminating Internship for Nursing Education (6)

The culminating internship provides educational experiences as a nurse educator. Students design, implement, and evaluate their teaching practicum under the guidance of a nurse educator mentor. The integration of curriculum, instructional, and evaluative theories and skills are expected throughout the experience. Focus is on critical reflection, collaboration, professional role development, and faculty responsibilities as the student engages in the advanced practice role of nurse educator. Prerequisites: NUR 500, NUR 503, NUR 560, NUR 526, NUR 535, NUR 545, HIM 501, PSY 570. Corequisites: NUR 624, NUR 635.

NUR 652 Family Primary Health Care I (3)

Theory, research, and the pathophysiology required to evaluate and manage clients across the lifespan are applied to a variety of problems. Conditions, diseases and communicable diseases of the eyes, nose, throat; head and neck; the skin, hair, nails; respiratory, hematological and immunologic systems encountered in the primary care setting are studied. The advanced roles of the nurse practitioner as case manager, educator and consultant are explored to enhance the health and well being of clients and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 572, NUR 580. Pre/Corequisites: NUR 503 or NUR 504A, and at least one (1) credit of NUR 670.

NUR 653 Adult Primary Health Care I (2)

Theory, research, and the pathophysiology required to evaluate and manage clients across the lifespan are applied to a variety of problems. Conditions, diseases and communicable diseases of the eyes, ears, nose, throat; head and neck; the skin, hair, nails; respiratory, hematological and immunologic systems encountered in the primary care setting are studied. The advanced roles of the nurse practitioner as case manager, educator and consultant are explored to enhance the health and well being of clients and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 574, NUR 582. Pre/Corequisites: NUR 503 or NUR 504A, and at least one (1) credit of NUR 672.

NUR 654 Gerontological Primary Health Care I (3)

Theory, research, and the pathophysiology required to evaluate and manage older adult clients are applied to a variety of problems. Conditions, diseases and communicable diseases of the eyes, ears, nose, throat; head and neck; the skin, hair, nails; respiratory, hematological and immunologic systems encountered in the primary care setting are studied. The advanced roles of nurse practitioner as case manager, educator and consultant are explored to enhance the health and well being of older adult clients and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 576, NUR 584. Corequisite: NUR 503/504A, and at least one (1) credit of NUR 674.

NUR 658 Women's Health Care (2)

Theory, research, and pathophysiology are applied to the evaluation and management of women who experience a variety of acute and chronic health problems throughout their lifespan. Emphasis is on health promotion and disease prevention activities in primary care settings. Basic areas explored are gynecological examinations, disease screenings, management of normal pregnancy, and care of the pregnant woman during prenatal and postpartum visits. Critical reflection will assist the student in exploring the advanced roles of case manager, educator, and consultant to enhance the health and well-being of women and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: For adult nurse practitioner majors, NUR 574, NUR 582; for family nurse practitioner majors, NUR 572, NUR 580. Pre/Corequisites: NUR 503/NUR 504A; for adult nurse practitioner majors, NUR 653 and three (3) credits of NUR 672; for family nurse practitioner majors, NUR 652 and three (3) credits of NUR 670.

NUR 659 Gynecological Health Care of the Older Adult (2)

Theory, research, and pathophysiology are applied to the evaluation and management of the women who experience a variety of acute and chronic health problems beyond their childbearing years. Emphasis is on health promotion and disease prevention activities in primary care settings. Basic areas explored are gynecological examinations, disease screenings; and the management of acute and chronic health issues of the older adult woman. Critical reflection will assist the student in exploring the advanced roles of case manager, educator, and consultant to enhance the health and well-being of women and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 576, NUR 584. Corequisite: NUR 503/504A, NUR 654 and three credits of NUR 674.

NUR 667 Gerontological Primary Health Care II (4)

The theory, research, and pathophysiology required to evaluate and manage older adult clients with a variety of cardiovascular, peripheral vascular, pulmonary, acute and chronic renal and gastrointestinal, neuromuscular and psychiatric problems, and office emergencies encountered in the primary care setting are addressed. The professional roles of the nurse practitioner as a case manager, educator, and consultant are explored to enhance the health and well being of the older adult clients and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 654 and at least one (1) credit of NUR 674. Corequisites: At least two (2) credits of NUR 674.

NUR 668 Family Primary Health Care II (4)

The theory, research and pathophysiology required to evaluate and manage clients with a variety of cardiovascular, peripheral vascular, pulmonary, acute and chronic renal and gastrointestinal, neuromuscular and psychiatric problems, and office emergencies encountered in the primary care setting are addressed. The professional roles of the nurse practitioner as a case manager, educator, and consultant are explored to enhance the health and well being of clients and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 652 and at least one (1) credit of NUR 670. Corequisites: At least two (2) credits of NUR 670.

NUR 669 Adult Primary Health Care II (3)

The theory, research, and pathophysiology required to evaluate and manage clients with a variety of cardiovascular, peripheral vascular, pulmonary, acute and chronic renal and gastrointestinal, neuromuscular and psychiatric problems, and office emergencies encountered in the primary care setting are addressed. The professional roles of the nurse practitioner as a case manager, educator, and consultant are explored to enhance the health and well being of clients and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 653 and at least one (1) credit of NUR 672. Corequisite: At least two (2) credits of NUR 672.

NUR 670 Intermediate Level Family Clinical (Variable 1-3)

Clinical experience provides an opportunity to deliver primary care within a community based setting to a population with a variety of cross-cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to these clients provide the students with challenges to expand their knowledge and skills as well as to explore judgment making and priority setting abilities. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide guidance in the clinical settings under contract with the School of Nursing and Health Systems. This clinical will build on skills and knowledge previously obtained at the beginning level. Three credits are required for course completion. The student will complete 5.5 contact hours per week per credit. Prerequisites: Current New York Registered Professional Nurse license, current CPR certification, complete health clearance on file, NUR 580. Pre/Corequisites: NUR 503 or NUR 504A, NUR 652.

NUR 672 Intermediate Level Adult Clinical (Variable 1-3)

Clinical experience provides an opportunity to deliver primary care within a community based setting to a population with a variety of cross-cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to these clients provide the students with challenges to expand their knowledge and skills as well as to explore judgment making and priority setting abilities. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide guidance in the clinical settings under contract with the School of Nursing and Health Systems. This clinical will build on skills and knowledge previously obtained at the beginning level. Three credits are required for course completion. The student will complete 5.5 contact hours per week per credit. Prerequisites: Current New York Registered Professional Nurse license, current CPR certification, complete health clearance on file, NUR 582. Pre/Corequisites: NUR 503 or NUR 504A, NUR 653.

NUR 674 Intermediate Level Gerontological Clinical (Variable 1-3)

Clinical experience provides an opportunity to deliver primary care within a community based setting to the older adult population with a variety of cross-cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to these clients provide the students with challenges to expand their knowledge and skills as well as to explore judgment making and priority setting abilities. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide guidance in the clinical settings under contract with the School of Nursing and Health Systems. This clinical will build on skills and knowledge previously obtained at the beginning level. Three credits are required for course completion. The student will complete 5.5 contact hours per week per credit. Prerequisites: NUR 584, current NYS RN license, current CPR certification, complete health clearance on file in the SON&HS office. Corequisites: NUR 503/504A, NUR 654.

NUR 680 Advanced Level Family Clinical (Variable 1-4)

Clinical experience provides an opportunity to deliver primary care within a community based setting to a population with a variety of cross-cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to these clients provide the students with challenges to expand their knowledge and skills as well as to explore judgment making and priority setting abilities. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide guidance in the clinical settings under contract with the School of Nursing and Health Systems. The graduate student must have precepted with a master's prepared nurse practitioner prior to completion of the final clinical. This clinical will build on skills and knowledge previously obtained at the beginning and intermediate levels. Four credits are required for course completion. The student will complete 5.5 contact hours per week per credit. Prerequisites: Current New York Registered Professional Nurse license, current CPR certification, complete health clearance on file, NUR 580 and three (3) credits of NUR 670. Pre/Corequisites: NUR 658, NUR 668.

NUR 682 Advanced Level Adult Clinical (Variable 1-3)

Clinical experience provides an opportunity to deliver primary care within a community based setting to a population with a variety of cross-cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to these clients provide the students with challenges to expand their knowledge and skills as well as to explore judgment making and priority setting abilities. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide guidance in the clinical settings under contract with the School of Nursing and Health Systems. The graduate student must have precepted with a master's prepared nurse practitioner prior to completion of the final clinical. The clinical will build on skills and knowledge previously obtained at the beginning and intermediate levels. Four credits are required for course completion. The student will complete 5.5 contact hours per week per credit. Prerequisites: Current New York Registered Professional Nurse license, current CPR certification, complete health clearance on file, NUR 582 and three (3) credits of NUR 672. Pre/Corequisites: NUR 658, NUR 669.

NUR 684 Advanced Level Gerontological Clinical (Variable 1-3)

Clinical experience provides an opportunity to deliver primary care within a community based setting to the older adult population with a variety of cross-cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by older adult clients in diverse health care settings. Opportunities to deliver primary care to these clients provide the students with challenges to expand their knowledge and skills as well as to explore judgment making and priority setting abilities. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide guidance in the clinical settings under contract with the School of Nursing and Health Systems. The graduate student must have precepted with a master's prepared nurse practitioner prior to completion of the final clinical. This clinical will build on skills and knowledge previously obtained at the beginning and intermediate levels. Four credits are required for course completion. The student will complete 5.5 contact hours per week per credit. Prerequisites: NUR 584 and three (3) credits of NUR 674, current NYS RN license, current CPR certification, complete health clearance on file in the SON&HS office. Corequisites: NUR 659, NUR 667.

NUR 692 Culminating Seminar for Nurse Practitioners (2)

Seminar provides opportunity for the students to critically reflect upon personal and professional values. Benner's Model of Novice to Expert is used as a framework for students to self examine their ongoing development in clinical proficiency as they advance toward achieving professional excellence. Standards and scope of practice specific to the role of the nurse practitioner are emphasized. Relevant issues related to legal and regulatory constraints within a competitive and challenging health care system are also examined at the local, state, and federal levels. Prerequisites: NUR 658; for adult nurse practitioner majors, NUR 653, NUR 672; for family nurse practitioner majors, NUR 652, NUR 670. Pre/Corequisites: For adult nurse practitioner majors, NUR 669, NUR 682; for family nurse practitioner majors, NUR 668, NUR 680.

**Pending program change approval.*

Psychology

PSY 570 Measurement & Assessment (3)

Assessment is a critical feature underlying all educational and clinical interventions. This course exposes the graduate student to the measurement principles, ethical, legal and social issues involved in psychological testing and to the nature, administration and interpretation of psychological tests encountered in educational and health care settings.

Technology Information Management

TIM 500 Project Management (3)

Reviews traditional project management techniques and project based organizational structures. Special attention is given to the integration of project management with technology and strategic objectives. Organizational issues, project tracking, the project manager, and project management techniques are examined both from the conceptual and the applied aspects. The potential for transferring knowledge gained from projects to multiple areas in the organization is also covered. Students will experience computer application software to support and implement project management activities.

TIM 530 Managing New Product Design and Development (3)

Regardless of the industry or business involved, careful attention must be given to the way new products are designed and developed. Various aspects of product design and development are studied; including the functions of research and development, marketing, finance, design, manufacturing, and technical specifications. Special attention is given to the tools and methodologies necessary in the creation and development of a new product. An important focus of this course is on the challenges and perspectives presented by products that result from high technology environments or are themselves "high technology products."

TIM 585 Cases in Technology and Innovation Management (3)

Key areas of management, production and distribution will be examined and the impact of rapid technological advances on them will be analyzed. Appropriate responses will be developed and discussed. Primary method of instruction is "Case Studies" and seminar discussions.

TIM 685 Strategic Planning (3)

This is the capstone strategy course that covers the economics and strategy of technology and innovation management. An integrating experience using case studies to apply the various skills and knowledge accumulated throughout the required coursework in business and technology management. Special emphasis will be upon how organizations fit within the social, political, and economic environments. Managerial strategies to optimize achievement of objectives in high technology environments will also be covered. [Formerly BUS 685]

Telecommunications

TEL 500 Voice Communications (3)

Provides knowledge of the components, operations, and services of analog and digital local loop circuit switched networks, digital and VOIP PBXs, and signaling systems. Advances in wire line and wireless voice telecommunications networks including VOIP, power line communications, passive optical networks, and broadband wireless are investigated.

TEL 501 International Telecommunications Policy and Trade (3)

A course investigating trade in services and equipment policies of the United States, the European Community, and other major governments, as well as international trade agencies, international carriers, and transnational corporate users of telecommunications. Topics include competition and privatization, bilateral and multilateral trade agreements including GATT, the WTO, international technical standards, intellectual property, and the competitive satellite industry. This course also addresses the reorganization and global responsibilities of the International Telecommunications Union.

TEL 502 Data Communications (3)

Data communications is a rigorous treatment of advanced topics in the technology of communicating digital information over public and private communications facilities. The topics include general principles, LANs, WANs, and related topics. These topics are covered in: lectures, individual exercises, team exercises, and interactive competitive team projects.

TEL 505 Network Design and Simulation (3)

A course investigating network design and simulation modeling enabling telecommunications system developers to evaluate the performance of existing and proposed networks under different hardware, configurations, or operating constraints. Simulation modeling minimizes risks of unforeseen network bottlenecks, under utilization of overuse of system resources.

TEL 516 Digital & Internet Telephony (3)

Addresses both fundamental and advanced concepts in digital and internet telephony. The laboratory exercises are application oriented and address both telecommunications switching and transmission systems thereby allowing students to reinforce concepts such as the convergence of voice, data and multimedia, voice over IP. Prerequisite: TEL 201 or TEL 500.

TEL 520 Telecommunications Systems Analysis and Project Management (3)

A study of project management techniques and processes from a corporate user perspective. Topics include strategic planning, needs assessment, development of requests for proposals, security and disaster planning, financial evaluation techniques, negotiation with vendors, outsourcing, implementation and system changeover planning, and creation of validation and acceptance test procedures. Cross listed with TEL 420.

TEL 527 Telecommunication Optical Networks (3)

Addresses techniques for designing single and multiple wavelength long-haul and metro telecommunication optical networks. Topics include general principles of optical components, design parameters and design techniques. These topics are covered in: lectures, individual exercises, team exercises, and computer simulations. Please note that this course is not at a level that is appropriate for Electrical Technology and Electrical Engineering students and is not likely appropriate for physics majors as well because of the depth and breadth of the coverage.

TEL 530 Telecommunications Law and Policy (3)

A seminar in the regulation of telecommunications in the United States. Designed to provide students with an understanding of the regulatory and antitrust environment and its impact on competition and services. Social and political issues affecting telecommunications regulation are also addressed.

TEL 535 Public Safety Telecommunications (3)

An analysis of Public Safety Telecommunications' technologies, technical standards, and political issues. Major subjects studied include narrowband and broadband interoperability challenges for police, fire, EMS, and transportation agencies; ultra wide band systems, APCO project 25; TETRA, project MESA; vendor MESA; vendor communities; and commercial considerations in acquiring a new network. The general methodology for designing a generic public safety network will be examined, as well as a case study of a current advanced public safety network.

TEL 540 Integration of Telecommunications and Computer Systems (3)

Analyzes the principles, operations, and implementation of computer integrated-telecommunications in various corporate environments.

TEL 570 First Mile Access Networks (3)

An overview of technologies behind the first mile networks, often referred to as the local loop. Topics included will be Passive Optical Networks, Enterprise Fiber Solutions, Wireless Communications, Broadband Wireless Access, Free Space Optics, DSL Technologies, and Power Line Communication. These topics are covered in lectures, individual exercises, and team exercises. Please note that this course is not at a level that is appropriate for Electrical Technology and Electrical Engineering students and is likely not appropriate for physics majors as well because of the depth and breadth of the coverage.

TEL 580 Strategic Integration of Telecommunications in a Competitive Environment (3)

Examines the role of the telecommunications manager as the purveyor of information technologies within the modern corporate environment. Includes a review of strategic telecommunications system analysis and design. Relies on extensive use of case studies.

TEL 581 Survey of Information Assurance (3)

A fast paced introduction into the field of Information Assurance. Various kinds of threats faced by an information system and the security techniques

used to combat them are covered. Hacker methods, viruses, worms, bombs and system vulnerabilities are described with respect to the actions that must be taken by a network manager to thwart them. Existing and planned protection methods and defenses are mapped to the information system threats and attacks. This course provides the background for those individuals who seek skills in the areas of Network and Data Security.

TEL 582 Security for Telecommunications Networks (3)

A course providing advanced skills required to analyze internal and external network security threats, and develop security policies to protect an organization's information. Students will learn how to evaluate network and Internet security challenges and design and implement firewall strategies. Prerequisite: TEL 581.

TEL 583 Network Protocols (3)

Network protocols is an advanced telecommunications course that covers the details of data network standards, architectures, and protocols with emphasis on TCP/IP. The topics include Network Access protocols, IP, UDP, TCP, Routing Protocols, and TCP/IP Applications. They are covered in lectures, individual exercises, team exercises, and team projects. Prerequisite: TEL 502.

TEL 585 Telecommunications Electronic Commerce (3)

Examines international trade, political, and technological dimensions of telecommunications electronic commerce. Government, international trade agency, and telecommunications network supplier and client planning for competition policy, intellectual property protections, security and privacy are analyzed.

TEL 590 Selected Topics in Advanced Telecommunications (3)

A course investigating current topics related to the research, development, deployment, and planning of new networks, signaling systems, transmission media and switching systems. Topics include wireless personal communications systems; satellite networks with an emphasis on the impact of fixed and mobile satellite systems on the economy and society; Broadband ISDN; ATM; SONET; AIN; and voice and data compression techniques.

TEL 591 Independent Study (Variable 1-3)

Extensive study and research on a particular topic of student interest under the supervision of a faculty member. The student is required to submit a written proposal which includes a description of the project, its duration, educational goals, method of evaluation and number of credits to be earned.

TEL 594 Graduate Internship (3)

Students work for an organization approved by their advisor for a minimum of 250 hours in a supervised position. Students are required to write two reports on their internship experience. Work must be completed in one term, or during the summer.

TEL 597 Research Project

Upon approval of the advisor, student will research, design, solve and implement a graduate project.

TEL 599 Thesis

Upon approval of the advisor, the student will research and write an original work on a significant topic in the field of telecommunications.

