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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite(s)</th>
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<tr>
<td>CSIT 100</td>
<td>Introduction to Computer Concepts</td>
<td>3</td>
<td>MATH 051 or MATH 061 or satisfactory score on both of the mathematical components of the MSUPT. Special fee.</td>
<td>An introduction to the skills, concepts, and capabilities necessary to effectively use information technology across the curriculum through computer applications. Not for mathematics major elective credit or computer science elective credit. Meets Gen Ed 2002 - Computer Science. Previous course CMPT 109 effective through Spring 2014. 3 hours lecture.</td>
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<tr>
<td>CSIT 102</td>
<td>New Student Experience in Computing and Campus Society</td>
<td>1</td>
<td></td>
<td>Special fee. Introduces students to the University, the Department of Computer Science and the culture of higher education. Students learn about campus resources and activities, the discipline of computer science, the hardware and software used in the discipline, careers for computer scientists, and development of good study skills. There is also emphasis on issues related to health, wellness, diversity, ethics, and a multicultural environment. Previous course CMPT 102 effective through Spring 2014. 1 hour lecture.</td>
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<tr>
<td>CSIT 104</td>
<td>Computational Concepts</td>
<td>3</td>
<td>MATH 100. Special Fee.</td>
<td>An introduction to the concepts of information technology. Principles of computing, Internet and office application software, hardware and networking components, the role of IT in an organization, legal and ethical issues of computing. Meets Gen Ed 2002 - Computer Science. Previous course CSIT 110 effective through Spring 2014. 3 hours lecture.</td>
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<tr>
<td>CSIT 105</td>
<td>Honors Seminar in Computing</td>
<td>3</td>
<td>Departmental approval; MATH 051 or MATH 061 or satisfactory score on both of the mathematical components of the MSUPT. Special fee.</td>
<td>Introduction to the theory, discipline, philosophy and applications of computing. The effect of computing upon the individual, the society, and the environment. Use of application tools including word processing, spreadsheets, data bases, and communications. Meets Gen Ed 2002 - Computer Science. Cross listed with HONP 105. Previous course CMPT 112 effective through Spring 2014. 3 hours seminar.</td>
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<tr>
<td>CSIT 111</td>
<td>Fundamentals of Programming I</td>
<td>3</td>
<td>MATH 100. MATH 112 may be taken as a corequisite or prerequisite. Special fee.</td>
<td>Introduction to the theory, discipline, philosophy and applications of computing. The effect of computing upon the individual, the society, and the environment. Use of application tools including word processing, spreadsheets, data bases, and communications. Meets Gen Ed 2002 - Computer Science. Previous course CMPT 183 effective through Spring 2014. 3 hours lecture.</td>
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<tr>
<td>CSIT 112</td>
<td>Fundamentals of Programming II</td>
<td>3</td>
<td>CSIT 111, CSIT 104 and MATH 112. Special fee.</td>
<td>Continuation of CSIT 111. Algorithm development involving user functions; subroutines, recursions, structures file manipulation. Meets Gen Ed 2002 - Computer Science. Previous course CMPT 184 effective through Spring 2014. 3 hours lecture. Starting Winter 2017 Prerequisite(s): MATH 112; and CSIT 104 and CSIT 111 with a grade of C- or higher.</td>
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<td>CSIT 200</td>
<td>- Computer Systems</td>
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<td>CSIT 212</td>
<td>- Data Structures and Algorithms</td>
<td>3</td>
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<td>Creation and manipulation of in-memory data structures including graphs, lists, queues, sets, stacks and trees; searching, sorting and other algorithms for in-memory data structures. Meets the University Writing Requirement for majors in Computer Science and Science Informatics. Previous course CMPT 287 effective through Spring 2014. 3 hours lecture.</td>
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<td>CSIT 230</td>
<td>- Introduction to Undergraduate Inquiry</td>
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<td>CSIT 296</td>
<td>- Topics in Programming Language</td>
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<td>CSIT 313</td>
<td>- Fundamentals of Programming Languages</td>
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<td>CSIT 315</td>
<td>- Software Engineering I</td>
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<td>CSIT 335</td>
<td>- Introduction to Human-Computer Interaction (HCI)</td>
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CSIT 337 # - Internet Computing 3 Credits
Prerequisite(s): CSIT 112 and CSIT 230. Special fee. This course discusses and investigates the current web tools and technologies that are used in web site design. Focus will be on the markup languages of XHTML and XML; Dynamic HTML; Client side programming language JavaScript; Server side programming, Servlets, JavaServer pages and ASP. Previous course CMPT 250 effective through Spring 2014. May be either 3 hours of lecture or 3 hours of seminar.

CSIT 340 # - Computer Networks 3 Credits
Prerequisite(s): CSIT 212 and CSIT 230. Special fee. An introduction to principles and practice of computer networking, with emphasis on the Internet. The layered approach to network design. The structure and components of computer networks, packet switching, layered architectures, TCP/IP, physical layer, error control, window flow control, local area networks (Ethernet, Token Ring; FDDI), network layer, congestion control, and quality of service. Previous course CMPT 330 effective through Spring 2014. 3 hours lecture.

CSIT 345 # - Operating Systems 3 Credits

CSIT 355 # - Database Systems 3 Credits
Prerequisite(s): CSIT 212 and CSIT 230 and CSIT 270. Special fee. A comprehensive collection of database organizations and design tools: file organizations and evaluations, database structures, schemata and implementations. Database security, operations and management. Previous course CMPT 483 effective through Spring 2014. 3 hours lecture.

CSIT 357 # - Artificial Intelligence 3 Credits
Prerequisite(s): CSIT 212 and CSIT 270. Special fee. A general, comprehensive coverage of the main areas constituting the field of artificial intelligence, introduction of computer vision, natural language processing (NLP), pattern recognition and neural networks. Previous course CMPT 388 effective through Spring 2014. 3 hours lecture.

CSIT 358 # - Multimedia Computing 3 Credits
Prerequisite(s): CSIT 212 and CSIT 230 and CSIT 270. Special fee. An introduction to computer multimedia, including video, audio, and graphics encoding creation and manipulation. Understanding of the variety of audio, image and video formats; using media creation tools. The course also covers streaming and multimedia in the world wide Web. Previous course CSIT 410 effective through Spring 2014. 3 hours lecture.

CSIT 379 # - Computer Science Theory 3 Credits
Prerequisite(s): CSIT 212 and MATH 122. Special fee. Formal languages, theory, automata, Turing Machines. computability, the Church-Turing thesis, decidability, time and space complexity, and NP-completeness. 3 hours lecture.

CSIT 414 # - Compiler Construction 3 Credits
Prerequisite(s): CSIT 379. Special fee. Introduction to the concepts and techniques used in the description of programming languages and in the construction of compilers. Topics include Language Theory, Scanners, Parsers, Semantics, Code Generation. Previous course CMPT 485 effective through Spring 2014. 3 hours lecture.

CSIT 415 # - Software Engineering II 3 Credits
Prerequisite(s): CSIT 315. Special fee. This course utilizes software engineering principles and techniques for the implementation, testing and maintenance of high-quality complex software systems, as designed in a previous course (CMPT 315). Previous course CMPT 372 effective through Spring 2014. 3 hours lecture.

CSIT 416 # - IT Project Management 3 Credits
Prerequisite(s): CSIT 355. Special fee. This course develops a foundation of concepts and solutions that supports the planning, scheduling, controlling, resource allocation, and performance measurement activities required for successful completion of a project. 3 hours lecture.

CSIT 429 # - Parallel and Distributed Computing 3 Credits
Prerequisite(s): CSIT 345. Special fee. An overview of a variety of parallel and distributed architectures ranging from multi-core, and symmetric multiprocessors to clusters and grids. The appropriate programming techniques for these architectures, such as threads and message passing. Parallelization of sequential algorithms for common problems. Speedup analysis. Previous course CMPT 350 effective through Spring 2014. 3 hours lecture.

CSIT 430 # - Databases for Internet Applications 3 Credits
Prerequisite(s): CMPT 250. Special fee. Introduction to fundamentals of databases with emphasis on Web-based applications. Database-related technologies for Internet applications. Practical projects for creating a database-driven application on the Web. 3 hours lecture.

CSIT 431 # - Introduction to Robotics 3 Credits
Prerequisite(s): CSIT 379. Special fee. An overview of the fundamental principles in autonomous robotics from the aspect of algorithms and computation. Includes theoretical concepts in robotic technology (inverse kinematics, actuation, sensing, manipulation, control and motion planning), complemented by hands on work with algorithms for robot communication and sensing. Investigation of current directions in robotics applications and ethics of robotics. 3 hours lecture.

CSIT 432 # - Systems Administration 3 Credits
Prerequisite(s): CSIT 340. Special fee. The administration and management of Linux Computer Systems. Includes installation; user/process management; configuration of services and device handling; introduction to C; (i) syntax of functions and basic structure, keywords, expressions, variables, scoping and lifetime, types, and type conversion, arrays and pointers, run-time stack, function invocation, parameter passing, passing arrays, memory & segments (dynamic, static, automatic), dynamic allocation, (ii) compilation process; preprocessor, compiling object code, static and dynamic linking; file I/O, Streams, Reading and Writing files, command line options, combining using pipes and I/O redirection, (iii) Profiling tools (Gprof), Binary Tools (LD, LDD, NM), Debugging (GDB, DDD); Basic Shell scripting, (iv) Build Tools (Make). Previous course CSIT 420 effective through Spring 2014. 3 hours lecture.

CSIT 437 # - Web Services 3 Credits
Prerequisite(s): CSIT 337. Special fee. Distributed Information Systems and Middleware Enterprise Application Integration and web technologies, web services and related technologies, real-world examples REST architectural style, Web 2.0, coordination and composition. Previous course CSIT 470 effective through Spring 2014. 3 hours lecture.

CSIT 440 # - Principles of Data Mining 3 Credits
Prerequisite(s): CSIT 112. Special fee. Introduction to Data Mining concepts, algorithms, and applications. Understanding the process of discovering new information in existing, large data collections. Exploration of large data sets and hands-on introduction to the discovery of interesting patterns. 3 hours lecture.
CSIT 445 # - Computer Architecture 3 Credits
Prerequisite(s): CSIT 345. Special fee. Introduction to chip technology, microprocessors, microcomputers, architecture, instruction sets and programming of microcomputers, and other bus-oriented computers. Previous course CMPT 385 effective through Spring 2014. 3 hours lecture.

CSIT 450 # - Text Management 3 Credits
Prerequisite(s): CSIT 430. Special fee. Introduction to managing data in text form. Includes creating, manipulating and data mining documents and data warehouses, evaluating data quality and investigating new techniques in managing World Wide Web data. 3 hours lecture.

CSIT 451 # - Mobile Computing 3 Credits
Prerequisite(s): CSIT 355. Special fee. Course content will include an introduction into mobile device programming including environment basics, application basics, creating user interfaces, how to deal with data, how to accommodate different devices, basic widgets and more advanced user interface parts for multimedia and maps, and app publication. 3 hours lecture.

CSIT 460 # - Computer Security 3 Credits
Prerequisite(s): CSIT 340. Special fee. An overview of the fundamental problems of computer security, followed by in-depth analysis of the current solutions including encryption, public key schemes, testing and analyzing current network security and internet architecture based on security considerations. Meets the University Writing Requirement for majors in Information Technology. Previous course CMPT 320 effective through Spring 2014. 3 hours lecture.

CSIT 473 # - Image Processing 3 Credits
Prerequisite(s): CSIT 379 and MATH 235. Special fee. In this course, image analysis and processing techniques are introduced. One-dimensional and two-dimensional theories for image processing are discussed. Topics include image representation, convolution, equalization, image filtering, segmentation, compression, morphological and medical imaging. Previous course CMPT 351 effective through Spring 2014. 3 hours lecture.

CSIT 474 # - Computer Graphics 3 Credits
Prerequisite(s): CSIT 379 and MATH 235. Special fee. An introduction to computer graphics, including the algorithms to generate two-dimensional and three-dimensional graphical pictures. An overview of interactive graphics and graphics devices. Previous course CMPT 472 effective through Spring 2014. 3 hours lecture.

CSIT 475 # - Scientific Computing 3 Credits
Prerequisite(s): CSIT 379. Special fee. Course content includes floating-point computations, numerical error analysis, interpolation, integration, solution of systems of linear equations, optimization, and initial-value problems of ordinary differential equations. Algorithms will be implemented using Matlab or numerical recipes in C. A variety of scientific examples will be used to illustrate scientific computing concepts. 3 hours lecture.

CSIT 490 # - Honors Seminar in Computer Science 3 Credits
Prerequisite(s): CSIT 345. Special fee. Topics not usually covered within standard computer science courses. A written and an oral report are required. Previous course CMPT 490 effective through Spring 2014. 3 hours lecture.

CSIT 491 # - Cooperative Education in Computer Science and Information Technology 3-8 Credits
Prerequisite(s): CSIT 340 and departmental approval. Special fee. The application of the conceptual ideas from Computer Science and Information Technology in a real-life work environment. The co-op experience is a semester of full- or part-time work under the guidance of a workplace supervisor and a faculty advisor. At most three credits may be applied towards the Computer Science or Information Technology majors. Previous course CMPT 499 effective through Spring 2014.

CSIT 495 # - Topics in Computer Science for Undergraduates 1-3 Credits
Prerequisite(s): CSIT 313 or CSIT 335 or CSIT 337 or CSIT 340 or CSIT 345 or CSIT 355 or CSIT 357 or CSIT 379. Special fee. Study of specialized topics in computer science. May be repeated once for a maximum of 6.0 credits as long as the topic is different. Previous course CMPT 495 effective through Spring 2014. 3 hours lecture.

CSIT 497 # - Undergraduate Research I 1-3 Credits
Prerequisite(s): CSIT 313 or CSIT 315 or CSIT 335 or CSIT 340 or CSIT 345 or CSIT 355 or CSIT 357 or CSIT 379. Special fee. Individual research in areas of computer science and information technology, agreed upon by the student and the instructor. The results of the research will be a basis of a seminar or colloquium to be given by the student. Students must not accumulate more than 6 credits total in courses CSIT 497 and CSIT 498. Previous course CMPT 497 effective through Spring 2014. 3 hours lecture.

CSIT 498 # - Undergraduate Research II 3 Credits
Prerequisite(s): CSIT 497 and departmental approval. Special fee. Individual research in areas of computer science and information technology, agreed upon by the student and the instructor. The results of the research will be a basis of a seminar or colloquium to be given by the student. Students must not accumulate more than 6 credits total in courses CSIT 497 and CSIT 498. Previous course CMPT 498 effective through Spring 2014. 3 hours lecture.

CSIT 501 # - Computer Science Foundations I 4 Credits
Prerequisite(s): Graduate coordinator’s permission. Special fee. An introduction to programming using a structured high level language, design of algorithms, character strings, recursion, data structures, numerical computing. May not be used for credit by Mathematics or Computer Science majors. Previous course CMPT 505 effective through Spring 2015. 4 hours lecture.

CSIT 502 # - Computer Science Foundations II 4 Credits
Prerequisite(s): CSIT 501 and permission of graduate coordinator. Special fee. A continuation of CSIT 501. Introduction to assembly language, addressing techniques, subroutine linkage, input/output and macros. Introduction to computer organization including memory, logic design and computer architecture. May not be used for credit by Mathematics and Computer Science majors. Previous course CMPT 506 effective through Spring 2015. 4 hours lecture.

CSIT 503 # - Computer Science Foundations III 4 Credits
Prerequisite(s): CSIT 501 and CSIT 504 and permission of graduate coordinator. Special fee. A continuation of CSIT 501. Design and analysis of data structures, pointers, linked representations, linear lists, trees, storage systems and structures, database design. Previous course CMPT 507 effective through Spring 2015. 4 hours lecture.

CSIT 504 # - Computer Science Foundations IV 4 Credits
Prerequisite(s): Graduate program coordinator’s permission. Special fee. Sets, relations, functions, graphs, trees, propositional calculus, induction and recursion, applications to computer science. May not be used for credit by Mathematics or Computer Science majors. Previous course MATH 501 effective through Spring 2015. 4 hours lecture.
CSIT 514 # - Compiler Construction 3 Credits
Prerequisite(s): CMPT 581 and departmental approval for students with Deferred or Conditional status. Special fee. Introduction to the formal description of programming languages, the theory of parsing, and the concepts and techniques used in the construction of compilers. Previous course CMPT 591 effective through Spring 2015. 3 hours lecture.

CSIT 515 # - Software Engineering 3 Credits
Prerequisite(s): Departmental approval for students with Deferred or Conditional status. Special fee. Principles and methods for the analysis, design, implementation, testing, and verification of software systems. Topics include requirements analysis, domain analysis, implementation, testing, verification, and software management. Previous course CMPT 594 effective through Spring 2015. 3 hours lecture.

CSIT 529 # - Parallel and Distributed Computing 3 Credits
Prerequisite(s): CSIT 545 and CSIT 571 and departmental approval for students with Deferred or Conditional status. Special fee. This course provides a study of the state-of-art of parallel processing algorithms and architectures. Parallel processing uses multiple processors working together in a synchronized fashion to solve large problems fast. Previous course CMPT 680 effective through Spring 2015. 3 hours lecture.

CSIT 531 # - Robotics 3 Credits
Prerequisite(s): Departmental approval for students with Deferred or Conditional status. Special fee. Fundamental principles in robotics from the aspect of algorithms and computation. Includes fundamentals in robotic technology (inverse kinematics, actuation, sensing, manipulation, control, and motion planning), algorithms for robot communication and sensing, and current directions in robotics applications. 3 hours lecture.

CSIT 535 # - Human-Computer Interaction (HCI) 3 Credits
Prerequisite(s): Departmental approval for students with Deferred or Conditional status. Special fee. Course content will include: science-based theories, models, and studies; and user interface design and development. Graphical user interfaces for desktop, web, and mobile devices. Assess usability by quantitative and qualitative methods. Conduct task analyses, usability tests, expert reviews, and continuing assessments of working products by interviews, surveys, and logging. Apply design processes and guidelines to develop professional quality user interfaces. Build low-fidelity paper mockups, and a high-fidelity prototype using contemporary tools and programming environments. 3 hours lecture.

CSIT 537 # - Web Development 3 Credits
Prerequisite(s): CSIT 501 or equivalent and departmental approval for students with Deferred or Conditional status. Special fee. This course will discuss issues related to web tools, enterprise web services, and web design. It examines the current state of the arts web development technologies and tools that are used in developing web sites and web services. Previous course CSIT 570 effective through Spring 2015. 3 hours lecture.

CSIT 540 # - Computer Networks 3 Credits
Prerequisite(s): CSIT 545 and departmental approval for students with Deferred or Conditional status. Special fee. Physical and logical aspects of data communications: analog-digital, broadband-baseband, TDM-FDM, protocols, modulation techniques, hardware for communication. Previous course CMPT 596 effective through Spring 2015. 3 hours lecture.

CSIT 545 # - Computer Architecture 3 Credits
Prerequisite(s): Departmental approval for students with Deferred or Conditional status. Special fee. Basic computer organization and design, digital functions, data representation, microprogramming, CPU organization, the assembler language, and addressing techniques. Required of majors. Previous course CMPT 580 effective through Spring 2015. 3 hours lecture.

CSIT 547 # - Operating Systems 3 Credits
Prerequisite(s): CMPT 581 and departmental approval for students with Deferred or Conditional status. Special fee. Design and implementation of operating systems, multiprogramming, multiprocessor, device management, scheduling, virtual memory, case studies. Previous course CMPT 584 effective through Spring 2015. 3 hours lecture.

CSIT 550 # - Text Management 3 Credits
Prerequisite(s): Undergraduate degree in a Computing Related Field, CMPT 505 or departmental approval for students with Deferred or Conditional status. Special fee. An introduction to managing data in text form. Includes creating, manipulating and data mining document and data warehouses, evaluating data quality and investigating new techniques in managing World Wide Web data including advanced usage of XML technologies. 3 hours lecture.

CSIT 551 # - Mobile Computing 3 Credits
Prerequisite(s): Departmental approval for students with Deferred or Conditional status. Special fee. Course content will include an introduction into mobile device programming including environment basics, application basics, creating user interfaces, how to deal with data, how to accommodate different devices, basic widgets and more advanced user interface parts for multimedia and maps, and app publication. 3 hours lecture.

CSIT 555 # - Database Systems 3 Credits

CSIT 560 # - Network Security 3 Credits
Prerequisite(s): CSIT 504 and CSIT 501 or equivalent; and departmental approval for students with Deferred or Conditional status. Special fee. An overview of the fundamental problems of intra and inter network security, followed by an in-depth analysis of the current solutions including encryption, authentication, web application security, internet architectures. Testing, analyze current security solutions, based on the three fundamental concepts: Confidentiality, Integrity, and Availability. Previous course CSIT 520 effective through Spring 2015. 3 hours lecture.

CSIT 567 # - Cryptography 3 Credits
Prerequisite(s): CSIT 545. Cryptography is an indispensable tool that allows us to protect information in computer systems. This fundamental course includes a great range of discussion on well-known Cryptographic techniques, including prefect secrecy, block ciphers, symmetric encryption, message authentication codes, hash functions, public key cryptography, key exchange mechanisms, digital signatures and digital certificates. 3 hours lecture.
CSIT 571 # - Computer Algorithms and Analysis 3 Credits
Prerequisite(s): Departmental approval for students with Deferred or Conditional status. Special fee. Algorithms: definition, design and analysis; sorting and searching techniques and introductory dynamic programming studied as algorithms with complexity theory and optimization techniques applied. Required of majors. Previous course CMPT 583 effective through Spring 2015. 3 hours lecture.

CSIT 574 # - Image Processing 3 Credits
Prerequisite(s): CSIT 545 and departmental approval for students with Deferred or Conditional status. Special fee. This course provides an introductory and comprehensive treatment of pixel and image processing with applications to fine arts, face recognition, etc. Topics include sampling and quantization, convolution, equalization, filtering, image segmentation, image operations, morphological image processing. Previous course CMPT 574 effective through Spring 2015. 3 hours lecture.

CSIT 575 # - Computer Graphics 3 Credits
Prerequisite(s): CSIT 545 and departmental approval for students with Deferred or Conditional status. Special fee. An introduction to computer graphics, including the algorithms to generate two-dimensional and three-dimensional graphical pictures. An overview of ray tracing, shading and color theory. Interactive graphics. Graphics devices. Previous course CMPT 575 effective through Spring 2015. 3 hours lecture.

CSIT 595 # - Topics in Computer Science 3 Credits
Prerequisite(s): CSIT 545 and departmental approval for students with Deferred or Conditional status. Special fee. Recent developments in the field. Topics such as Monte Carlo methods, graphics, expert systems, security, networks and special areas of applications. May be repeated twice for a maximum of 9.0 credits as long as the topic is different. Previous course CMPT 585 effective through Spring 2015. 3 hours lecture. Starting Winter 2017 Prerequisite(s): Departmental approval for students with Deferred or Conditional status. Open to fully matriculated students.

CSIT 598 # - Machine Learning 3 Credits
Prerequisite(s): Some knowledge of basic probability, statistics, and a bit linear algebra. Full matriculation into the program, or departmental approval for students with deferred or conditional status. Machine learning is a very active field, where one wants to program computers to automatically extract useful information from data to solve a given problem (e.g., learn to recognize human faces, recommend music and movies, and drive autonomous robots). This course is a gentle introduction to modern machine learning. The course aims to strike a balance between theoretical and practical applications. Some key concepts behind several machine learning algorithms will be explored. 3 hours lecture.

CSIT 610 # - Information Technology Project Management 3 Credits
Prerequisite(s): Departmental approval for students with Deferred or Conditional status. Special fee. IT Project Management is a course designed to teach students the basic principles of project management as applied to the Information Technology field. The outcome of the course will provide the foundation for developing technology-based project plans, management and experience in project management. 3 hours lecture.

CSIT 615 # - Advanced Topics in Software Engineering 3 Credits
Prerequisite(s): CSIT 515 or departmental approval for students with Deferred or Conditional status. Special fee. This course examines (i) planned and systematic patterns of all actions necessary to provide adequate confidence that a product conforms to established requirements, and (ii) a set of activities designed to evaluate the process by which high-quality complex software products are developed. Previous course CMPT 694 effective through Spring 2015. 3 hours lecture.

CSIT 616 # - Software Process Management 3 Credits
Prerequisite(s): Departmental approval for students with Deferred or Conditional status. Special fee. Software process management studies processes and concepts for planning and monitoring all software life-cycle phases. Topics include management models and structures, project planning including scheduling, effort estimation and risk management, project personnel and organization, project control (monitoring, measurement, correction and performance standards), software configuration management, and process description languages and tools. 3 hours lecture.

CSIT 635 # - Advanced Human-Computer Interaction (HCI) 3 Credits
Prerequisite(s): CSIT 535 or departmental approval for students with Deferred or Conditional status. Special fee. This course will include an overview of the field of human-computer interaction, and- in a user-centered fashion - members of the class will choose and explore deeply a subfield of HCI (e.g. Technologies for Children, Technologies for Families, Augmented Reality). Students will critically assess, present, and improve upon recent research that is published in the most prestigious HCI conferences and journals. 3 hours lecture.

CSIT 655 # - Advanced Database Systems 3 Credits
Prerequisite(s): CSIT 555 and departmental approval for students with Deferred or Conditional status. Special fee. To develop in-depth understanding of database concepts and issues. The major emphasis of the course is on the conceptual (logical) organization, retrieval, and manipulation of data. Required of majors. Previous course CMPT 592 effective through Spring 2015. 3 hours lecture.

CSIT 665 # - Scientific Databases 3 Credits
Prerequisite(s): Departmental approval for students with Deferred or Conditional status. Special fee. The course aims to give students the tools and concepts they will need to work with scientific databases in an in-depth manner. It also aims to introduce students to advanced, state-of-the-art concepts as well as give the students the chance to explore scientific database issues within their fields of interest while still in their early stages of study. 3 hours lecture.

CSIT 670 # - Advanced Computer Algorithms and Analysis 3 Credits
Prerequisite(s): CSIT 571 and departmental approval for students with Deferred or Conditional status. Special fee. Dynamic programming, game trees and backtracking techniques, branch and bound, polynomial evaluation and fast Fourier transform algorithms; complexity and analysis, and optimization techniques will be applied. NP-hard problems and NP-completeness. Previous course CMPT 683 effective through Spring 2015. 3 hours lecture.

CSIT 690 # - Industry Internship in Information Technology Management 3 Credits
Prerequisite(s): Departmental approval for students with Deferred or Conditional status. Special fee. This course will serve as the culminating experience for students enrolled in the Masters of Computer Science/Applied Information Technology Concentration. Students will work with industry partners and faculty to analyze significant problems and work on significant projects in Information Technology, developing solutions towards these problems. 3 hours lecture.
CSIT 691 # - Independent Study: Computer Science 3 Credits
Prerequisite(s): Departmental approval for students with Deferred or Conditional status. Special fee. Independent study under the direction of a faculty member, offering the opportunity to pursue topics in computer science which may be outside the scope of regular curricular offerings or may be an extension of an existing course or courses. Approval must be obtained from the graduate coordinator or and faculty advisor. May be repeated once for a maximum of 6.0 credits. Previous course CMPT 690 effective through Spring 2015.

CSIT 695 # - Readings in Computer Science 1-4 Credits
Prerequisite(s): CMPT 581 and CSIT 555 and CSIT 571 and departmental approval for students with Deferred or Conditional status. Special fee. Guided study of selected topics in major field of interest. Previous course CMPT 695 effective through Spring 2015. 1-4 hours seminar.

CSIT 696 # - Literature Survey in Computer Science 3 Credits
Prerequisite(s): Departmental approval for students with Deferred or Conditional status. Special fee. Significant investigation of an area of computing research or practice, culminating in the creation of a comprehensive survey or tutorial. Surveys summarize and organize research results in a novel way that integrates and adds understanding to work in the field by classifying existing literature, developing a perspective on the area, and/or evaluating trends. A tutorial paper organizes and introduces work in the field by emphasizing the basic concepts of a field and providing concrete examples that embody these concepts. 3 hours lecture.

CSIT 697 # - Master's Project in Computer Science 3 Credits
Prerequisite(s): Completion of the computer science required core courses and departmental approval for students with Deferred or Conditional status. Special fee. Analysis of a significant problem related to computing and design of a solution. Where appropriate, implementation and testing as well as documentation of the solution. Previous course CMPT 697 effective through Spring 2015. 3 hours lecture.

CSIT 698 # - Master's Thesis 3 Credits
Prerequisite(s): Departmental approval for students with Deferred or Conditional status. Special fee. Independent research project done under faculty advisement. Students must follow the MSU Thesis Guidelines, which may be obtained from the Graduate School. Students should take CSIT 699 if they don’t complete CSIT 698 within the semester. Previous course CMPT 698 effective through Spring 2015.

CSIT 699 # - Master's Thesis Extension 1 Credit
Prerequisite(s): CSIT 698 and departmental approval for students with Deferred or Conditional status. Special fee. Continuation of Master’s Thesis Project. Thesis extension will be graded as IP (In Progress) until thesis is completed, at which time a grade of Pass or Fail will be given. Previous course CMPT 699 effective through Spring 2015.