GRADUATE STUDENT HANDBOOK

Master of Science in Health Information Technology
(MHIT)

Master of Science in Information Technology
(MSIT)

Integrated Information Technology Department
College of Engineering and Computing
University of South Carolina
Columbia, South Carolina

2023-24

I. INTRODUCTION

We welcome you to the University of South Carolina and to the Integrated Information Technology Department in the College of Engineering and Computing. We trust that your studies with us will be an enjoyable and rewarding experience.

This handbook will acquaint you with the Master of Health Information Technology (MHIT), and the Master of Science in Information Technology (MS in IT) graduate programs offered by the Integrated Information Technology (IIT) Department in the College of Engineering and Computing, University of South Carolina. The IIT Graduate Director will act as your advisor; however, every faculty member will be pleased to discuss any academic or professional matters about which you are concerned. Please feel free to make an appointment to see us at any time.

The information in this handbook is intended to help you interpret and clarify the degree requirements, academic regulations, and procedures for the master's degree programs in the Integrated Information Technology Department. The guidelines listed here are not intended to supersede or replace the more general requirements listed in *The Graduate Studies Bulletin* of the University.

II. ADMISSION, ORIENTATION, AND REGISTRATION

Admission

Admission to the Master of Health Information Technology (MHIT) and the Master of Science in Information Technology (MS in IT) programs is based on the applicant's previous college work, letters of recommendation, GRE or GMAT scores, and TOEFL or other English language test scores when appropriate. All applicants must submit a one-page statement of purpose describing what the candidate hopes to achieve by pursuing a graduate degree. All candidates must meet the general requirements for admission to the Graduate School as described in the *Graduate Studies Bulletin*.

The MHIT degree program accepts students from a broad range of disciplines who hold undergraduate degrees. If the undergraduate degree is in either information technology or a healthcare-related field, the student normally can begin graduate coursework the semester following acceptance into the University of South Carolina's Graduate School.

While the MS in IT program is designed for those with a computing background, students without such preparation can still enroll and earn the degree. Based on their experience, they may be asked to complete up to four foundational classes before they are fully admitted into the program. Foundation classes focus on networking, database systems, web design, and software development. The detailed specification of course requirements and substitutions of courses from other universities will be considered on a case-by-case basis.

In a few instances, students are admitted as "non-degree" candidates. This category is used when a student does not present all the credentials needed for admission to a degree program but can, in the opinion of the Department, benefit from our graduate program. Non-degree students may become degree candidates when their credentials are complete, and they demonstrate the capability to do successful graduate work for one or more semesters. Note: International applicants cannot be admitted as non-degree students due to visa regulations. Only 12 credit hours earned as a non-degree student may be applied to a master's degree. Foundation classes in the MSIT program will not count toward the credits needed for the degree because they are not graduate level classes.

Orientation and Registration for New Students

There will be an orientation session for all new graduate students at the beginning of each fall semester. All new students starting in the spring or summer semesters should attend orientation in the subsequent fall semester.

The Graduate Director will be your academic advisor. IIT faculty and their roles within the department are listed at the end of this manual, and can be found here: IIT Faculty Directory. New graduate students should communicate with the Graduate Director for advisement (selection of courses) and registration instructions. After advisement, students may register through https://my.sc.edu. Students enrolled for fewer hours are considered part-time.

Registration for Continuing Students

The use of https://my.sc.edu allows early registration during the preceding semester. Continuing students must be advised by the Graduate Director before registering. Students must register for a minimum of nine credit hours to be considered a fulltime graduate student; students with graduate assistantships are considered full time if they register for six credit hours.

The Honor System

All students are expected to live up to the Carolina Creed and Honor Code, We expect all our graduate students not only to do their own work but also to report to the appropriate faculty member any violations by others. Any graduate student guilty of a violation of these honor principles may be asked to leave. More information can be found here: Academic Integrity

Academic Progress

All students must demonstrate satisfactory progress towards their degree. Satisfactory progress requires continuous enrollment from one semester to the next, except for summer terms. If a student misses a fall or spring semester, they must apply for reinstatement through the Update Form at the Graduate School.

Enrollment

All graduate students must maintain continuous enrollment in both fall and spring semesters while they pursue a degree in the department. Full-time enrollment is nine credit hours per semester. Students in the online program or those appointed as research or teaching assistants must enroll for a minimum of six credit hours each fall and spring semester to be considered full-time. Part-time students must also maintain continuous enrollment of at least three credit hours each fall and spring semester. Due to visa regulations international students must be enrolled full time.

Practicum, Internships, and Job Placement

Students in the MHIT program are required to complete 6 hours of a practicum internship. This practicum is an official class (ITEC 748 - Health Information Technology Practicum). The 6-hour requirement can be satisfied in one or more internships, depending on the scope of the internship. Prior work experience cannot be used to satisfy this requirement, as there are academic requirements associated with this class.

An internship is optional for students in the MS in IT degree program. Most students do their internship after they have completed all course work. Prior work experience cannot be used to satisfy this requirement, as there are academic requirements associated with this class.

We have an internship director to assist students in finding a practicum or internship and supervises the internship's academic requirements. However, it is the student's responsibility to secure an internship placement. The University has an online recruitment system available to current students and graduates to assist them in finding jobs and internships.

III. FACILITIES

Offices

The Integrated Information Technology Department is in the M. Bert Storey Engineering Center, 550 Assembly Street, Columbia, SC 29201. Faculty and staff offices are on the first floor, in Suite 1300.

Offices, Keys, Mailboxes, Telephones

Graduate Assistants (GAs) are given shared office space. This space includes a computer, printer and access to a photocopier. Offices are to be used only for official departmental business as required by the supervising professor. Graduate students who are not graduate assistants are not issued any office space and should not use any of the IIT office equipment for their personal or class needs. Graduate assistants will share mailboxes with their assigned professor. Access to the shared space is through the Carolina Card. Students conducting research toward a thesis may receive office assignments upon selection of a research advisor.

The departmental mailboxes should be used for official business related to your graduate activities. Use the following address for research-related business:

Integrated Information Technology Program
ATTN: (your name)/Graduate Student
Integrated Information Technology Department, Suite 1300
University of South Carolina
550 Assembly Street
Columbia, SC 29208

All offices are equipped with telephones for security and safety purposes. In general, graduate office telephones cannot be used for chargeable long-distance calls or calls that are personal in nature. However, some research advisors allow long distance calls to be made for research-related purposes.

Parking

Students providing documentation of their enrollment as a graduate student may purchase a Graduate Student (GS) parking permit from the Office of Parking Services, 1501 Pendleton Street, Columbia, SC 29208. This office is in the parking garage at the corner of Pendleton and Pickens Street. GS permits are valid at any time in "Resident Student", "Student", and "Any Decal Parking" lots. For more information, contact the Office of Parking Services, (803) 777-5160.

Photocopier

The department's photocopier should be used only for official university business and research purposes. The photocopier may require an access code. If this is the case, the code will be issued by the supervising faculty member or the Administrative Coordinator in the Integrated Information Technology Department. Use of the photocopier for graduate coursework is not permitted. Graduate students may be issued a copier access code after they have been assigned to a research advisor. Copier access codes must not be shared with others under any circumstances.

Library

The library resources of the University of South Carolina are housed primarily in the Thomas Cooper Library, a seven-story building located on Greene Street between the Russell House and Longstreet Theater. Patrons have access to all shelved materials except those in Special Collections. Books may be checked out with a valid Carolina Card. Students may not check out periodicals, but photocopy machines are available on Level 4 and the Mezzanine for making copies of any necessary material. Photocopying cards are available; students conducting research should consult their committee chair about obtaining or borrowing photocopying cards.

Most research resources are now available via the internet, including the library catalog (USCAN) and electronic access to research journals (TDNET). These resources and other information are available via the USC Libraries web page at **www.sc.edu/library**.

Athletic Facilities

The two recreation and fitness facilities located on campus: the Blatt PE Center, 1300 Wheat Street, and the Strom Thurmond Wellness Center, 1000 Blossom Street, on the corner of Blossom and Assembly Streets. They offer a wide variety of fitness activities. Students need only to present Carolina Cards to gain entrance into these facilities. They also offer locker rentals, towel services, guest privileges, and family memberships are available to students, faculty, and staff for additional fees. There may be part-time employment opportunities, as well. For more information visit their web page for more information: Campus Recreation

Insurance Benefits

ALL USC COLUMBIA STUDENTS MUST HAVE HEALTH INSURANCE, including graduate students taking six hours or more, graduate students with assistantships, and international students. Students may purchase coverage in the University's health insurance plan or provide evidence of coverage by another comparable health insurance plan. More information about health insurance can be found here: Insurance and Fees. The cost of university-sponsored health insurance is subsidized for graduate assistants. The premium for this coverage will be included on the tuition bill each semester, with any subsidy applied automatically. Payments can be automatically deducted from stipend paychecks.

Email Communication

The University and the IIT Department will communicate with graduate students via their university issued email account. Students are expected to check that email account daily.

Petition and Appeal Procedure

The IIT departmental Graduate Faculty functions as a petition and appeal committee for graduate students requesting relief from a departmental academic regulation. Students seeking relief from a departmental academic regulation must first consult with the Graduate Director. The Graduate Faculty only considers petitions coming from the Graduate Director.

If the student's request receives an unfavorable recommendation from the Graduate Director, the student may appeal in writing directly to the Graduate Faculty.

Unsatisfactory progress in meeting degree requirements may result in loss of financial support and/or disqualification from a degree program. In cases in which the departmental regulations permit remedial action, and if the remedial action brings the student into compliance with the regulations, then the Graduate Committee will consider a reinstatement of financial support and/or qualification for a degree program. The student may also regain lost status by favorable action on a new application for admission.

IV. FINANCIAL SUPPORT

Fellowships and Scholarships

Fellowships are awarded to all international students. Although the amount is a small token, it qualifies students to pay the in-state tuition rate. The Fellowship award amount is $500 annually and is applied at $250 per semester (Fall and Spring) – not including Summer. This Fellowship is in recognition of students' strong academic background and research potential. Other Fellowships and scholarships are sometimes available from industrial, government, and private sources. These may be allocated by the Department, they may be awarded competitively on an inter-departmental basis by the University, or they may be awarded through national competitions. The Department will attempt to inform you of all such support available and will be glad to assist qualified individuals in applying. Fellowship or scholarship awards are frequently based, at least in part, on the GRE or GMAT scores of competing nominees. More information can be found here: Fellowships and Awards

Assistantships

Graduate Research or Teaching Assistants receive stipends from funds administered by the Integrated Information Technology Program. All graduate assistant appointments entitle students to the in-state resident rate of tuition. Graduate Assistants are expected to work up to 20 hours per week to receive their stipends. Graduate students who are not on assistantships and students enrolled in the online program do not normally receive stipends.

Appointment as a GA should be completed by the department prior to registration. Students should ensure that all other enrollment issues (e.g., immigration paperwork, original transcripts, immunizations, health insurance enrollment, and legal residency) are resolved prior to registration to minimize problems that may prevent enrollment. Please see the department's Administrative Coordinator if problems arise with respect to GA appointment and tuition payments, stipends, payroll, and taxes. Tuition and payment information can be found here: Bursar's Office

Graduate assistant stipends are paid twice per month by check, at the middle and end of each month. Arrangements must be made to deposit checks directly to an individual's bank account; you may sign up for direct deposit on https://my.sc.edu. Federal and state income taxes will be deducted from these checks. All students must complete an I-9 form before being placed on the payroll. This form can be obtained from the department's Administrative Coordinator. A W-4 form must also be completed to establish the level of federal and state tax withholding. The IRS considers income from assistantships to be taxable, but the tuition remission is not taxable.

Termination of Support

After an assistantship or fellowship has been awarded, it will normally be continued during the period of graduate study. This support is contingent upon satisfactory performance of the duties of the assistantship, normal progress towards a degree, and satisfactory academic performance as defined by the requirements outlined in the Graduate Bulletin. Stipends may be reduced or suspended for students who are not making satisfactory or timely progress towards fulfillment of their degree requirements.

Time Limit on Support

It is the policy of the Department that, except in unusual circumstances, no graduate student shall be supported on teaching or research assistantships longer than two years.

Work during University Recesses

The duties of Graduate Assistants continue throughout the semester on all days that the University is open for regular business. Note, the university is still open for regular business during Fall and Spring Breaks even though classes are not held. The duties of Graduate Assistants normally begin with the start of classes each term and end when the final examination period has ended.

Vacation Policy

Students on graduate assistantships must work out schedules and personal leave time with their supervising professor. The student's supervisor should approve all personal leave absences. Extended absences (more than five working days) must be requested and approved in writing.

V. ACADEMIC PROGRESS CHECKLIST

Steps	Timing	Responsibility
1. Initial advisement by Graduate Director	Before registration for first semester	Student *
2. Registration for each subsequent semester	Toward the end of each semester	Student *
3. File Program of Study	Early in the final semester	Student *
4. File Degree Application with the Graduate School	Early in the semester of graduation	Student *
5. Certify completion of degree requirements	After the final semester	Graduate Director
6. Receive Degree	About six weeks after the final semester	Graduate School

* - Student should email the Graduate Director

VI. MASTER OF SCIENCE DEGREE OPTIONS

The Master of Science in Information Technology may be earned through either a Professional Track or a Research Track. In both tracks, at least half of the credit hours (exclusive of thesis preparation) must be earned in courses number 700 and above. Students currently enrolled in the BS Integrated Information Technology degree program can select the Accelerated Master's option, which allows them to earn graduate credit toward the master's degree while still working on their undergraduate degree. Minimum GPA requirements apply.

Professional Track Program of Study (30 credit hours)

The MS in IT Professional Track is available 100% online or as a residential program. Students who choose this track must take 12 hours of IT Core Courses, 15 hours in IT Electives, a 3-hour ITEC 766 - IT Project Management course, and pass a written comprehensive examination offered at the end of Fall and Spring semesters.

REQUIREMENTS	CREDIT HOURS
IT Core Courses	**12**
IT Elective Courses	**15**
Capstone – Project Management Course	**3**

Research Track Program of Study (33 credit hours)

The MS in IT Research Track is a residential program not available 100% online. Students who choose this track must take 12 hours of IT Core Courses, 12 hours in IT Elective Courses, a 3-hour Research Methods course, and 6 hours of ITEC 799 - Thesis Preparation. Student must successfully write and defend a thesis under faculty guidance.

REQUIREMENTS	CREDIT HOURS
IT Core Courses	**12**
IT Elective Courses	**12**
Research Methods Course	**3**
ITEC 799 - Thesis Preparation	**6**

VII. COURSEWORK PLANNING SHEET: MHIT DEGREE PROGRAM

Number	Course Title	Grade	Term Planned	Notes
Core Courses (18 credit hours required)				
ITEC 747	Management of Health Information Systems (3)			
ITEC 752	Health Systems Analysis and Design (3)			
ITEC 764	Project Management for Health Information Systems (3)			
HSPM 700 OR PUBH 700	Approaches and Concepts for Health Administration (3) OR Perspectives in Public Health (3)			
ITEC 770	Health Database Systems (3)			
HSPM 768	Health Services Administration II (3)			
Health Electives (any combination of a minimum of 3 and a maximum of 9 credit hours)				
BIOS 710	Effective Data Management in Public Health (3)			
HSPM 711	Health Politics (3)			
HSPM 712	Heatlh Economics (3)			
HSPM 726	Applied Public Health Law (3)			
HSPM 730	Financing of Health Care (3)			
HSPM 769	Organizational Behavior (3)			
HSPM 777	Healthcare Policy and Principles of Health Insurance (3)			
HSPM 791	Special Topics (3)			
NURS 717	Application of Basic Statistics for Nursing Practice (3)			
NURS 734	Conceptual Basis of Health Systems (3)			
NURS 738	Financing of Health Care (3)			
Information Technology Electives (any combination of a minimum of 3 and a maximum of 9 credit hours)				
ITEC 743	Health Information Security (3)			
ITEC 745	Telecommunications for Health Information Systems (3)			
ITEC 762	Health Information Systems Usability and Interface Design (3)			
ITEC 775	Large Scale Health Information Systems (3)			
ITEC 776	Health IT and Clinical Transformation (3)			
ITEC 590	Special Topics in Integrated Information Technology (3)			
ITEC 790	Special Topics in Health Information Technology			
ITEC 795	Directed Study in Health Information Technology			
Practicum in Health Information Technology (6 credit hours required)				
ITEC 748	Health Information Technology Practicum (1-6)			

VIII. COURSEWORK PLANNING SHEET: MS in IT DEGREE PROGRAM

Number	Course Title	Grade	Term Planned	Notes
Core Courses (12-15 credit hours)				
ITEC 749	Principles of Informatics (3)			
ITEC 754	Analysis and Design of Information Systems and Technology (3)			
ITEC 766	IT Project Management **(research track core course)**			
ITEC 772	Database Systems (3)			
ITEC 781	Enterprise Data Analytics (3)			
Electives (12-15 credit hours)				
ITEC 510	Emerging Information Technology Trends (3)			
ITEC 534	Advanced Human Computer Interaction (3)			
ITEC 540	Cloud Computing and Virtualization			
ITEC 544	Training Systems (3)			
ITEC 545	Telecommunications (3)			
ITEC 552	Linux Programming and Administration (3)			
ITEC 562	Advanced Web Support Systems (3)			
ITEC 570	Database Management and Administration (3)			
ITEC 742	Enterprise Network Management (3)			
ITEC 743	Health Information Privacy and Security (3)			
ITEC 746	Telecommunications for Health IT (3)			
ITEC 747	Management of Health Information Systems (3)			
ITEC 760	Cyberinfrastructure and Information Assurance (3)			
ITEC 761	Management of Cyberinfrastructure (3)			
ITEC 762	Health IT Usability and Interface Design (3)			
ITEC 764	Project Management for Health Information (3)			
ITEC 765	HCI, Usability and Interface Design (3)			
ITEC 766	IT Project Management **(professional track elective)**			
ITEC 770	Health Database Systems (3)			
ITEC 775	Large-Scale Health Information Systems (3)			
ITEC 776	Health IT and Clinical Transformation (3)			
ITEC 781	Artificial Intelligence and Informatics I (3)			
ITEC 782	Artificial Intelligence and Informatics II (3)			
ITEC 786	Advanced Enterprise Data Analytics (3)			
ITEC 787	Advanced Data Analytics Tools (3)			
ITEC 790	Special Topics in Informatics (3)			
ITEC 791	Introduction to Management of Information Security (3)			
ITEC 792	Management of Cyber Operations (3)			
ITEC 793	Cybersecurity Risk Management (3)			

ITEC 795	Independent Study in Health IT (3)			
Research Methods (0-3 credit hours)				
BIOS 700	Introduction to Biostatistics (3)			
EDFI 731	Qualitative Inquiry (3)			
EDRM 710	Educational Statistics I (3)			
SOCY 515	Scientific Methods and Sociological Inquiry (3)			
SOCY 562	Advanced Sociological Research Methods (3)			
STAT 506	Introduction to Experimental Design (3)			
STAT 509	Statistics for Engineers (3)			
STAT 515	Statistical Methods I (3)			
STAT 700	Applied Statistics I (3)			
Thesis (6 credit hours)				
ITEC 799	Thesis Preparation (1-6)			

IX. PROGRAM FACULTY

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X. INTEGRATED INFORMATION TECHNOLOGY GRADUATE BULLETIN

For information on all the IIT Graduate Programs, Courses, and Program Requirements see the following link:
https://academicbulletins.sc.edu/undergraduate/engineering-computing/integrated-information-technology/

XI. ITEC COURSE DESCRIPTIONS

Courses offerings are based on faculty availability.

ITEC 510 - Emerging Information Technology Trends (3 Credits)
Survey of emerging information technology (IT) trends, featuring IT industry professionals presenting disruptive and emerging information technologies being developed and/or adopted by businesses within South Carolina.

ITEC 534 - Advanced Human Computer Interaction (3 Credits)
Review of current trends & challenges of human-computer interaction, the design of emerging technologies including AI-driven technologies, such as chatbot design, Internet of Things design, and human-robot interaction design, biometric evaluation methods, and usability testing with AI-driven emerging technologies.
Prerequisites: B or better in **ITEC 444** or **ITEC 762**.

ITEC 540 - Cloud Computing and Virtualization (3 Credits)
Comprehensive introduction to cloud computing. Key concepts such as cloud types, delivery models, leading service providers, networking, storage, virtualization, containerization, orchestration, and cloud security. Navigating modern IT environments and making informed decisions when implementing or utilizing cloud solutions.
Prerequisites: C or better in ITEC 104 or CSCE 104; C or better in ITEC 245. (Contact Graduate Director to waive prerequisite requirements)

ITEC 544 - Training Systems (3 Credits)
Theory, design, and implementation of technology-based training systems, including hardware and software solutions.
Prerequisites: C or better in **ITEC 444**.

ITEC 545 - Telecommunications (3 Credits)
Telecommunications systems, applications, and equipment allowing for the global dissemination of information.
Prerequisites: C or better in **ITEC 245**.

ITEC 552 - Linux Programming and Administration (3 Credits)
Shell scripting and administration in the Linux operating system.
Prerequisites: C or better in **CSCE 204**, **ITEC 204**, or **CSCE 145**.

ITEC 562 - Advanced Web Support Systems (3 Credits)
The development of advanced, dynamic, Web-based information systems, including the integration of back-end database-records management systems.
Prerequisites: C or better in **ITEC 362**.

ITEC 570 - Database Management and Administration (3 Credits)
Introduction to database administration and implementation using an enterprise-level Relational Database Management System (RDBMS).
Prerequisites: C or better in **ITEC 370**.

ITEC 590 - Special Topics in Integrated Information Technology (3 Credits)
Advanced concepts, issues, and trends in technology support and training management. Course content varies and will be announced in the schedule of classes by title. May be repeated twice for credit.

ITEC 742 - Enterprise Network Management (3 Credits)
Management of enterprise networks, including switched Local Area Networks (LANs), Wide Area Networks (WANs), data centers and cloud systems; monitoring and optimization of networks; emerging network technologies.
Prerequisites: C or better in **ITEC 749** and **ITEC 772**.

ITEC 743 - Health Information Privacy and Security (3 Credits)
Healthcare privacy and security threats and solutions. Compliance with patient information privacy and information security regulations.

ITEC 745 – Telecommunications for Health Information Systems. (3 Credits)
Overview of telecommunications technologies as they apply to health care delivery, health care administration, and health information exchange.

ITEC 747 - Management of Health Information Systems (3 Credits)
Overview of health information technology, electronic health records (EHR), and health information exchange (HIE), current practices, trends, and issues in health information systems management, and privacy and security of health information.

ITEC 748 – Health Information Technology Internship. (1-6 Credits)
Professional residency (internship) in health information technology. Positions assigned on an individual basis with emphasis on management decision making, oral and written communication skills, planning, and problem solving.

ITEC 749 - Principles of Informatics (3 Credits)
Integration of information technology across the business spectrum. Underlying technological developments and important business drivers of performance. Digital technology's role in relation to three major components of business

performance improvement: people, processes, and technology.
Prerequisites: C or better in **ITEC 447**.

ITEC 752 – Health Systems Analysis and Design. (3 Credits)
This course applies the principles of information systems analysis and design to health processes and applications. It looks at the analysis and logical design of business processes and management information systems focusing on the systems development life cycle; and techniques for logical system design.

ITEC 754 - Analysis and Design of Information Systems and Technology (3 Credits)
Application of the principles of information systems analysis and design to organizational processes and applications. Analysis and logical design of business processes and management information systems focusing on the systems development life cycle. Techniques for logical system design.
Prerequisites: B or better in **ITEC 447**.

ITEC 760 - Cyberinfrastructure and Information Assurance (3 Credits)
Information Technology (IT) elements of the cyber infrastructure; information assurance and security in the modern cyberinfrastructure; design and secure advanced systems that use, process, transmit, and store information.
Prerequisites: ITEC 742.

ITEC 761 - Management of Cyberinfrastructure (3 Credits)
Techniques, technologies, and management tools used in modern cyberinfrastructures, including software-defined data centers, next-generation software-defined networking (NG-SDN), and cloud systems.
Prerequisites: ITEC 760.

ITEC 762 - Health Information Technology Usability and Interface Design (3 Credits)
Overview of the analysis, design, and usability of health information systems. Includes consideration of computer interfaces, Web portals, and patient portals.

ITEC 764 - Project Management for Health Information (3 Credits)
Application of project management software, technologies and practices to the design and implementation of real-world health information technology projects. Integrates IT knowledge and skills learned in earlier graduate courses and challenges graduate students to learn new technologies and to solve real business problems.

ITEC 765 - Human Computer Interaction, Usability, and Interface Design (3 Credits)
Overview of the analysis, design, and usability of information systems. Includes consideration of computer interfaces, web portals, and human-computer interaction.
Prerequisites: C or better in **ITEC 749** and **ITEC 772**.

ITEC 766 - IT Project Management (3 Credits)
Application of project management tools to document key components of the implementation of a real-world information technology project.
Prerequisites: B or better in **ITEC 749** and **ITEC 772**.

ITEC 770 - Health IT Database Systems (3 Credits)
This course is an introduction to design, implementation, and management of database systems that form the foundation for health information systems.

ITEC 772 - Database Systems (3 Credits)
Fundamentals, design, implementation, and management of database systems that form the foundation for information systems and data analytics.
Prerequisites: B or better in **ITEC 747**.

ITEC 775 - Large-Scale Health and Information Systems (3 Credits)
Design, implementation, and operation of large-scale information systems for healthcare institutions. Includes EMRs, CPOE, e-prescribing, medication administration, CRM, and supply chain management.

ITEC 776 - Health Information Technology and Clinical Transformation (3 Credits)
Implementation of electronic health records (EHR) and health information exchange with focus on clinical transformation, which is the most difficult and critical component of achieving improved clinical outcomes and efficiencies from EHRs.

ITEC 781 - Artificial Intelligence and Informatics I (3 Credits)
Fundamental concepts in artificial intelligence, including intelligent agents, problem solving by searching, logic-based knowledge representation and inference, planning, and probabilistic reasoning. Basic techniques for building intelligent computer systems and applications to problems.
Prerequisites: B or better in **STAT 700**, **STAT 701**, **BIOS 700**, or **BIOS 757**; B or better in **ITEC 749**; B or better in **CSCE 145**, **CSCE 204**, or **ITEC 352**.

ITEC 782 - Artificial Intelligence and Informatics II (3 Credits)
Artificial Intelligence concepts including algorithmic decision making. Machine learning techniques such as learning from examples, learning probabilistic models, and reinforcement learning. Applications of AI technologies, e.g., natural language processing, robotics, and perception.
Prerequisites: B or better in **ITEC 781**.

ITEC 785 - Enterprise Data Analytics (3 Credits)
Mathematical and software tools and quantitative reasoning to the analysis of enterprise data. Fundamental concepts and essential skills in data analytics. Critical and creative thinking about quantitative and qualitative problems involving enterprise data.
Prerequisites: B or better in **MATH 174**; B or better in **STAT 700** or **STAT 701**; B or better in **ITEC 749**; C or better in **ITEC 264**.ITEC 786 - Advanced Enterprise Data Analytics (3 Credits)
Advanced concepts, issues, and trends in data analytics. Critical thinking and quantitative and qualitative analytical skills essential for Healthcare, Engineering, and Business among many others.
Prerequisites: B or better in **ITEC 785**.

ITEC 787 - Advanced Data Analytics Tools (3 Credits)
Software tools in data analytics. Advanced analytics techniques. Case studies and problem sets from multiple enterprise domains.
Prerequisites: B or better in **MATH 174** and **STAT 700**; C or better in **ITEC 264**.

ITEC 790 - Special Topics in Informatics (3 Credits)
Advanced concepts, issues, and trends in information technology. Course content varies and will be announced in the schedule of classes by title. May be repeated twice for credit.

ITEC 791 - Introduction to Management of Information Security (3 Credits)
Overview of information security exploring basic concepts and developing knowledge and skills of protecting valuable information assets and systems.

ITEC 792 - Management of Cyber Operations (3 Credits)
Technical and managerial aspects of IT security operations. Securing the cyberinfrastructure, detecting, and mitigating intrusion, monitoring and managing computing systems.

ITEC 793 - Cybersecurity Risk Management (3 Credits)
Risk assessments, risk mitigation strategies, security risks, controls and services, development and implementation of security policies, threat and vulnerability, risk management program.

ITEC 795 - Independent Study in Health Information Technology (1-3 Credits)
Independent study in association with a directing instructor on a topic not covered in standard classes. Contract approved by instructor, advisor, and graduate program director.

ITEC 799 - Thesis Preparation (1-6 Credits)
Thesis Preparation as part of an ITEC master's degree. Students will work under the direction of a major advisor who is a member of the Graduate Faculty.