INFORMATION TECHNOLOGY, M.S.

The Master of Science in Information Technology enables students to advance their technical expertise and their ability to integrate technologies into organizations. The degree addresses workforce demand for expertise in information technology and digital transformation needed to work effectively in today's data and technology-centric environments. The digital revolution is impacting all aspects of our lives, reshaping both personal and work lives everywhere. Students in the master's program have the opportunity to advance their knowledge in areas such as cyber-infrastructure, networking, data analytics, artificial intelligence, user experience and interface design. Students can work with faculty in a wide range of research endeavors, depending on their interests and career goals. Opportunities for research expands students' opportunities to pursue their own research interests and to publish papers at national conferences.

Learning Outcomes
1. Demonstrate the ability to apply advanced information technology principles to solve complex problems.
2. Analyze client information technology needs and develop, integrate, and evaluate innovative solutions.
3. Exhibit professional skills such as technical writing, oral communication, and working in trans-disciplinary teams.
4. Execute a rigorous research project in a specific information technology area of interest (Research Track only).
5. Design and conduct a development project in a specific information technology area of interest. (Professional Track only)

Admissions
Requirements for admission to the Master of Science in Information Technology (MSIT) program include the general admission requirements of The Graduate School, including the TOEFL for non-native English-speaking applicants. The admission process is highly competitive. Admissions decisions are based on the quality of the applicant's previous university-level academic work, prior work experience, letters of recommendation and other evidence of past accomplishments. While, the GRE is not required, a GRE score may be submitted to support the application and demonstrate the candidate's qualifications.

For admission to the MSIT, applicants normally hold a B.S. degree in information technology, computer science or a related field. Applicants without such a degree should have completed courses in software development, networking, databases, and web systems. Applicants not having courses in these subjects may be conditionally admitted to allow completion of required prerequisite courses before full admission is granted.

Degree Requirements (30-33 hours)
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. All MSIT students are subject to the academic regulations and degree requirements of the Graduate School and the program-specific requirements described here.

Professional Track Program of Study (30 hours)
The MSIT Professional Track is available 100% online and 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.

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT Core Courses</td>
<td>12</td>
</tr>
<tr>
<td>IT Elective Courses</td>
<td>15</td>
</tr>
<tr>
<td>ITEC 766 IT Project Management</td>
<td>3</td>
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</table>

Research Track Program of Study (33 hours)
The MSIT 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.

<table>
<thead>
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<tr>
<td>IT Core Courses</td>
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<tr>
<td>IT Elective Courses</td>
<td>12</td>
</tr>
<tr>
<td>Research Methods Course</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 799 Thesis Preparation</td>
<td>6</td>
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</table>

Courses

IT Core Courses (12 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITEC 749</td>
<td>Principles of Informatics</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 754</td>
<td>Analysis and Design of Information Systems and Technology</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 772</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 785</td>
<td>Enterprise Data Analytics</td>
<td>3</td>
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IT Elective Courses (12-15 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ITEC 510</td>
<td>Emerging Information Technology Trends</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 534</td>
<td>Advanced Human Computer Interaction</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 544</td>
<td>Training Systems</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 545</td>
<td>Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 552</td>
<td>Linux Programming and Administration</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 562</td>
<td>Advanced Web Support Systems</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 570</td>
<td>Database Management and Administration</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 590</td>
<td>Special Topics in Integrated Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 742</td>
<td>Enterprise Network Management</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 743</td>
<td>Health Information Privacy and Security</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 745</td>
<td>Telecommunications for Health Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 747</td>
<td>Management of Health Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 760</td>
<td>Cyberinfrastructure and Information Assurance</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 761</td>
<td>Management of Cyberinfrastructure</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 762</td>
<td>Health Information Technology Usability and Interface Design</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 764</td>
<td>Project Management for Health Information</td>
<td>3</td>
</tr>
<tr>
<td>Course</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
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</tr>
<tr>
<td>ITEC 765</td>
<td>Human Computer Interaction, Usability and Interface Design</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 766</td>
<td>IT Project Management (*)</td>
<td>3</td>
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<tr>
<td>ITEC 770</td>
<td>Health IT Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 775</td>
<td>Large-Scale Health and Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 776</td>
<td>Health Information Technology and Clinical Transformation</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 781</td>
<td>Artificial Intelligence and Informatics I</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 782</td>
<td>Artificial Intelligence and Informatics II</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 786</td>
<td>Advanced Enterprise Data Analytics</td>
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<tr>
<td>ITEC 787</td>
<td>Advanced Data Analytics Tools</td>
<td>3</td>
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<tr>
<td>ITEC 790</td>
<td>Special Topics in Informatics</td>
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<tr>
<td>ITEC 791</td>
<td>Introduction to Management of Information Security</td>
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<tr>
<td>ITEC 792</td>
<td>Management of Cyber Operations</td>
<td>3</td>
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<tr>
<td>ITEC 793</td>
<td>Cybersecurity Risk Management</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 795</td>
<td>Independent Study in Health Information Technology</td>
<td>1-3</td>
</tr>
</tbody>
</table>

1 Courses from other departments may be used with approval of the advisor and Graduate Director.

*ITEC 766 is an elective for Research Track only (it is a requirement in the Professional Track)

**Research Methods Courses (0-3 hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 700</td>
<td>Introduction to Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>EDFI 731</td>
<td>Qualitative Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>EDRM 710</td>
<td>Educational Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>SOCY 515</td>
<td>Scientific Methods and Sociological Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>SOCY 562</td>
<td>Advanced Sociological Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>STAT 506</td>
<td>Introduction to Experimental Design</td>
<td>3</td>
</tr>
<tr>
<td>STAT 509</td>
<td>Statistics for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>STAT 515</td>
<td>Statistical Methods I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 700</td>
<td>Applied Statistics I</td>
<td>3</td>
</tr>
</tbody>
</table>

2 Courses in quantitative research from other departments may be used with approval of the advisor and Graduate Director.