

# BACHELOR OF INFORMATION TECHNOLOGY AND MANAGEMENT

## Program for First-Year Students

All students must complete a minimum of 36 credit hours of courses with a significant written and oral communication component, identified with a (C) in the catalog; 12 credit hours of (C)-coded courses must be taken in the major.

ITM students are required to complete a minor and are strongly encouraged to consider minors which complement their primary program of study; these include (but are not limited to) business, industrial technology, professional and technical communications, circuits and systems, computer architecture, and ROTC. Courses taken to fulfill a minor requirement may not also be used as electives in the major. The minor requirement may be waived for students entering as transfer students or who change their major to information technology and management after completion of 30 credit hours of studies at the university.

A maximum of nine credit hours of ITM graduate courses taken as an undergraduate may be applied to the Master of Information Technology and Management degree, and any graduate courses taken to fulfill undergraduate degree requirements may not also be applied to a graduate degree unless the student is enrolled in a co-terminal or accelerated master's degree program.

## Required Courses

Code	Title	Credit Hours
<b>ITM Requirements</b>		<b>(42)</b>
ITM 301	Introduction to Contemporary Operating Systems and Hardware I	3
ITM 303	Introduction to Contemporary Operating Systems and Hardware II	3
ITM 311	Introduction to Software Development	3
ITM 313	Introduction to Open Source Application Development	3
or ITM 312	Introduction to Systems Software Programming	
ITMD 321	Data Modeling and Applications	3
ITMD 361	Fundamentals of Web Development	3
ITMD 362	Human-Computer Interaction and Web Design	3
ITMD 411	Intermediate Software Development	3
ITMM 471	Project Management for Information Technology and Management	3
ITMO 340	Introduction to Data Networks and the Internet	3
ITMO 356	Introduction to Open Source Operating Systems	3
ITMS 448	Cyber Security Technologies	3
ITMT 330	Introduction to Information Systems and the IT Profession	3
ITMT 430	System Integration	3
<b>ITM Electives</b>		<b>(18)</b>
Select 18 credit hours from ITM, ITMD, ITMM, ITMO, ITMS, ITMT, and TECH		18
<b>Mathematics Requirements</b>		<b>(9)</b>
MATH 180	Fundamentals of Discrete Mathematics	3
or MATH 230	Introduction to Discrete Math	
MATH 192	Finite Mathematics	3
Select one course from the following:		3
BUS 221	Business Statistics	3
PSYC 203	Undergraduate Statistics for the Behavioral Sciences	4
MATH 225	Introductory Statistics	3
MATH 425	Statistical Methods	3
<b>Natural Science and Engineering Requirements</b>		<b>(10)</b>
EG 225 is recommended		
See Illinois Tech Core Curriculum, section D		10
<b>Humanities and Social Sciences Requirements</b>		<b>(21)</b>
PSYC 301 is recommended		
See Illinois Tech Core Curriculum, sections B and C		21

<b>Interprofessional Projects (IPRO)</b>	<b>(6)</b>
See Illinois Tech Core Curriculum, section E	6
<b>Minor, Technical, or Free Electives</b>	<b>(15)</b>
Select 15 credit hours	15
<b>Total Credit Hours</b>	<b>121</b>

## Bachelor of Information Technology and Management (Program for First-Year Students) Curriculum

Students should be aware that students not completing 30 credit hours of study in their first year will still be classified as a first-year student in the first semester of their second year of study, which may adversely impact some financial aid. Students with issues or questions about this should discuss it with a financial aid counselor.

		<b>Year 1</b>	
<b>Semester 1</b>	<b>Credit Hours</b>	<b>Semester 2</b>	<b>Credit Hours</b>
ITM 301	3	ITM 303	3
ITM 311	3	ITM 313	3
Natural Science or Engineering Elective	4	ITMO 356	3
Humanities 200-level Elective	3	MATH 180 or 230	3
		Natural Science or Engineering Elective	3
	<b>13</b>		<b>15</b>
		<b>Year 2</b>	
<b>Semester 1</b>	<b>Credit Hours</b>	<b>Semester 2</b>	<b>Credit Hours</b>
ITMD 321	3	ITMD 362	3
ITMD 361	3	ITMD 411	3
ITMT 330	3	ITMO 340	3
MATH 192	3	Statistics Elective (MATH 425, BUS 221, PSYC 203)	3
Natural Science or Engineering Elective	3	Social Science Elective	3
		Minor, Technical, or Free Elective	3
	<b>15</b>		<b>18</b>
		<b>Year 3</b>	
<b>Semester 1</b>	<b>Credit Hours</b>	<b>Semester 2</b>	<b>Credit Hours</b>
ITMM 471	3	ITM Elective	3
ITMS 448	3	ITM Elective	3
ITM Elective	3	Social Sciences Elective (300+)	3
Humanities Elective (300+)	3	Minor, Technical, or Free Elective	3
Minor, Technical, or Free Elective	3	Minor, Technical, or Free Elective	3
	<b>15</b>		<b>15</b>
		<b>Year 4</b>	
<b>Semester 1</b>	<b>Credit Hours</b>	<b>Semester 2</b>	<b>Credit Hours</b>
ITM Elective	3	ITMT 430	3
ITM Elective	3	ITM Elective	3
IPRO Elective	3	IPRO Elective II	3
Humanities Elective (300+)	3	Social Sciences Elective (300+)	3
Minor, Technical, or Free Elective	3	Humanities or Social Sciences Elective	3
	<b>15</b>		<b>15</b>

**Total Credit Hours: 121**

## Information Technology Curriculum Specializations

The ITM electives may be chosen from one or more of the following course specializations. ITM required courses may not be counted toward completion of elective requirements for specializations. With the permission of the adviser, other undergraduate or graduate courses in the same area may be substituted for courses in a specialization.

### Data Management

Focuses on the design, development, and administration of traditional and Internet-based data management.

Code	Title	Credit Hours
ITMD 422	Advanced Database Management	3
ITMS 428	Database Security	3
Select two courses from the following:		6
ITMO 444	Cloud Computing Technologies	3
or any ITMD elective(s)		
<b>Total Credit Hours</b>		<b>12</b>

### IT Entrepreneurship and Management

Focuses on the managerial and entrepreneurial skills needed to launch a new enterprise.

Code	Title	Credit Hours
ITMM 470	Fundamentals of Management for Technology Professionals	3
ITMM 481	Information Technology Entrepreneurship	3
ITMM 482	Business Innovation	3
Select one course from ITMM or the following:		3
any BUS electives at the 200-level or above		3
or any INTM electives selected with adviser's approval		3
<b>Total Credit Hours</b>		<b>12</b>

### Networking and Communications

Focuses on network applications and management.

Code	Title	Credit Hours
ITMO 441	Network Administration and Operations	3
ITMO 446	Telecommunications Over Data Networks	3
Select one course from the following:		3
ITMO 433	Enterprise Server Administration	3
ITMO 453	Open Source Server Administration	3
Select one course from ITMO, ITMT, or the following:		3
ITMS 443	Vulnerability Analysis and Control	3
ITMS 478	Cyber Security Management	3
<b>Total Credit Hours</b>		<b>12</b>

### Software Development

Focuses on programming and the development of sophisticated applications.

Code	Title	Credit Hours
ITMD 415	Advanced Software Development	3
ITMD 441	Web Application Foundations	3
Select two courses from the following:		6
ITMD 412	Advanced Structured and Systems Programming	3
ITMD 413	Open Source Programming	3
ITMD 419	Topics in Software Development	3
ITMD 453	Enterprise Intelligent Device Applications	3
ITMD 454	Mass-Market Intelligent Device Applications	3
ITMD 455	Open-Source Intelligent Device Applications	3
or any ITMD elective		3
<b>Total Credit Hours</b>		<b>12</b>

### System Administration

Focuses on the administration and the management of servers.

Code	Title	Credit Hours
ITMO 441	Network Administration and Operations	3
Select two courses from the following:		6
ITMO 433	Enterprise Server Administration	3
ITMO 450	Enterprise End-User System Administration	3
ITMO 453	Open Source Server Administration	3
Select one course from the following:		3
ITMO 417	Shell Scripting for System Administration	3
ITMO 444	Cloud Computing Technologies	3
ITMO 454	Operating System Virtualization	3
ITMS 458	Operating System Security	3
<b>Total Credit Hours</b>		<b>12</b>

### Systems Security

Focuses on application, data, and network security and the management of information technology security.

Code	Title	Credit Hours
ITMS 428	Database Security	3
ITMS 478	Cyber Security Management	3
Select one course from the following:		3
ITMO 433	Enterprise Server Administration	3
ITMO 441	Network Administration and Operations	3
ITMO 450	Enterprise End-User System Administration	3

ITMO 453	Open Source Server Administration	3
Select one ITMS elective		3
<b>Total Credit Hours</b>		<b>12</b>

### Web Design and Application Development

Focuses on the design and development of fully-interactive websites and applications for Internet deployment.

Code	Title	Credit Hours
ITMD 441	Web Application Foundations	3
ITMD 442	Full-Stack Web Development	3
Select two courses from the following;		6
ITMD 443	Front-End Web Development	3
ITMD 444	Back-End Development	3
ITMD 445	Web Real-Time Communication	3
ITMD 446	Web Microservices and APIs	3
ITMD 447	Web Systems Integration	3
ITMD 449	Topics in Web Development	1-3
ITMD 466	Service-Oriented Architecture	3
<b>Total Credit Hours</b>		<b>12</b>