

DOCTOR OF PHILOSOPHY IN INFORMATION TECHNOLOGY

Overview

To receive a Ph.D., students must meet coursework requirements and pass qualifying exams, a comprehensive exam, and a thesis defense. At the conclusion of their studies, graduates of this degree should be able to:

- Demonstrate mastery of one or more core areas of information technology through original research and published documentation of such research.
- Research, design, and deliver optimal technical and policy technology solutions for the problems of business, industry, government, non-profit organizations, and individuals in the student's particular core area(s).
- Lead, manage, and work with teams in an enterprise environment to collaboratively arrive at optimal technology solutions.

Curriculum

Students in the Ph.D. program have course requirements that depend on whether they enter the program with a Master of Science in Information Technology or a related computing field, a master's degree not in information technology or a computing field, or with a bachelor's degree in information technology. A student's adviser may require specific core or elective courses be taken. Possible elective courses may include PSYC 540, PSYC 545, PSYC 546, PSYC 554, and MATH 525.

Students With a Master of Science in Information Technology or a Related Computing Field ¹

Requirement	Credits
Minimum Total Credits Required	72
Maximum Transfer Credit ²	32
500-, 600-, or 700-Level Course Credit Required	40

Code	Title	Credit Hours
Required Courses (12)		
Select a minimum of three courses from three different core course groups as listed below.		
ITM 695	Doctoral Seminar	3
Readings and Special Problems Course (0-6)		
ITMT 597	Special Problems in Information Technology ⁴	0-6
General Electives (0-6)		
Select zero to six credit hours		
Ph.D. Research (24-28)		
ITM 691	Research and Thesis Ph.D.	24-28
Transfer Credit (32)		
A maximum of 32 credit hours of master's transfer credit is allowed.		

Students With a Master's degree Not in Information Technology or a Computing Field ¹

Requirement	Credits
Minimum Total Credits Required	72
Maximum Transfer Credit ²	23
500-, 600-, or 700-Level Course Credit Required	49

Code	Title	Credit Hours
Required Courses (18)		
Select a minimum of one course from each of the following core course groups: Software Development, System Technologies, and Business Development		
Select a minimum of two courses from two of the following core course groups: Cybersecurity, Data Analytics and Management, Management		
ITM 695	Doctoral Seminar ³	3
Readings and Special Problems Course (0-9)		
ITMT 597	Special Problems in Information Technology	0-9
General Electives (0-9)		
Select zero to nine credit hours in conjunction with adviser		
Ph.D. Research (24-31)		
ITM 691	Research and Thesis Ph.D.	24-31
Transfer Credit (23)		
A maximum of 23 credit hours of masters transfer credit is allowed.		

Students With a Bachelor's degree in Information Technology

Requirement	Credits
Minimum Credits Required	72
500-, 600-, or 700-Level Course Credit Required	72

Code	Title	Credit Hours
Required Courses (18)		
Select a minimum of one course from each of the following core course groups: Software Development, System Technologies, and Business Development		
Select a minimum of two courses from two of the following core course groups: Cybersecurity, Data Analytics and Management, Management		
ITM 695	Doctoral Seminar ³	3
Readings and Special Problems Course (0-9)		
ITMT 597	Special Problems in Information Technology ⁴	0-9
General Electives (9-21)		
Select 9-21 credit hours in conjunction with adviser		

Ph.D. Research	(24-36)
ITM 691	Research and Thesis Ph.D. 24-36

¹ Students with a degree in a related computing field or a master's degree not in information technology or a related computing field may be required to complete prerequisite and specific core or elective courses selected by their adviser. Undergraduate-level prerequisite courses will not be applied to the degree.

² 400-level Information Technology and Management courses earned at Illinois Institute of Technology may not be applied. A maximum of 12 credit hours of 400-level courses may be transferred if the courses were applied to a master's degree.

³ Students must take three sequential semesters of ITM 695.

⁴ At least three credit hours of ITMT 597 or ITMT 691 are required in the first year.

Notes

- To be used to satisfy requirements, courses must be passed with a grade of "B" or better. 400-level Information Technology and Management courses earned at Illinois Institute of Technology and accelerated courses cannot be used. With department approval, courses may be replaced by more advanced courses.
- The 500- and 600-level electives can include credit hours from ITMT 595. They cannot include credit hours from ITMT 597, ITM 691, or ITM 695. With department approval, up to nine credit hours may come from outside the ITM department.
- Total credits required for the degree is a minimum. A student's adviser may require other courses to be taken. Consequently the total credits taken may exceed the minimum.

Core Courses

There are six core course areas. To meet a core requirement, a course must be taken at Illinois Institute of Technology as part of the Ph.D. or a previously completed Master's program; transfer courses from other institutions cannot be used. Core courses must be passed with "B" or better to satisfy core course requirements.

Code	Title	Credit Hours
Group 1: Software Development		(18)
ITMD 511	Application Development Methodologies	3
ITMD 512	Structured and Systems Programming	3
ITMD 513	Open Source Programming	3
ITMD 515	Advanced Software Programming	3
ITMD 536	Software Testing and Maintenance	3
ITMD 542	Full-Stack Web Development	3
Group 2: System Technologies		(18)
ITMO 541	Network Administration and Operations	3
ITMO 544	Cloud Computing Technologies	3
ITMO 553	Open Source System Administration	3
ITMO 554	Operating Systems Virtualization	3
ITMO 557	Storage Technologies	3
ITMT 593	Embedded Systems	3
Group 3: Business Development		(18)

ITMD 532	UML-Based Software Development	3
ITMD 534	Human and Computer Interaction	3
ITMD 535	Human-Computer Interaction Design	3
ITMM 581	Information Technology Entrepreneurship	3
ITMM 582	Business Innovation	3
ITMM 587	Product Management	3
Group 4: Cybersecurity		(18)
ITMS 528	Database Security	3
ITMS 548	Cyber Security Technologies	3
ITMS 558	Operating Systems Security	3
ITMS 578	Cyber Security Management	3
ITMS 584	Governance, Risk, and Compliance	3
ITMS 588	Incident Response, Disaster Recovery, and Business Continuity	3
Group 5: Data Analytics and Management		(18)
ITMD 522	Data Mining and Machine Learning	3
ITMD 523	Advanced Topics in Data Management	3
ITMD 524	Applied Artificial Intelligence and Deep Learning	3
ITMD 526	Data Warehousing	3
ITMD 529	Advanced Data Analytics	3
ITMT 531	Object-Oriented System Analysis, Modeling, and Design	3
Group 6: Management		(18)
ITMM 537	Vendor Management and Service Level Agreements	3
ITMM 570	Fundamentals of Management for Technology Professionals	3
ITMM 571	Project Management for Information Technology Management	3
ITMM 572	Process Engineering for Information Technology Managers	3
ITMM 574	Information Technology Management Frameworks	3
ITMM 585	Legal and Ethical Issues in Information Technology	3