

Memorandum

Date: 11.17.2021

To: Undergraduate Studies Committee

From: Department of Information Technology and Management

**Subj: PROPOSED DUAL-DEGREE PROGRAM: BACHELOR OF INFORMATION TECHNOLOGY AND MANAGEMENT /
BACHELOR OF INDUSTRIAL TECHNOLOGY AND MANAGEMENT**

Attached is a proposal for an integrated dual degree program leading to the Bachelor of Information Technology and Management (ITM) and the Bachelor of Industrial Technology and Management (INTM) while maintaining the integrity and program content of each individual degree program.

This proposal has been approved by the Curriculum Committee and the Faculty of the Department of Information Technology and Management and the Industrial Technology and Management Program.


Ray Trygstad

BACHELOR OF INFORMATION TECHNOLOGY AND MANAGEMENT/BACHELOR OF INDUSTRIAL TECHNOLOGY AND MANAGEMENT

This program provides an integrated dual degree program leading to the Bachelor of Information Technology and Management (ITM) and the Bachelor of Industrial Technology and Management (INTM) while maintaining the integrity and program content of each individual degree program.

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	Code	Title	Credit Hours
ITM Requirements (39)			Mathematics Requirements (6)		
ITM 100	Intro to IT as a Profession	3	MATH 180	Fundamentals of Discrete Math	3
ITM 301	Intro OS and Hardware I	3	or MATH 230	Introduction to Discrete Math	
ITM 311	Intro to Software Development	3	Statistics - select one course from the following:		3
ITM 313	Intro to Open Source App Dev	3	BUS 221	Business Statistics	3
or ITM 312	Intro Systems Sftwr Prgmng	3	PSYC 203	Undergrad Stats Bhvrl Sci	4
ITMD 321	Data Modeling and Applications	3	MATH 225	Introductory Statistics	3
ITMD 361	Fund of Web Development	3	MATH 425	Statistical Methods	3
ITMD 362	Human-Computer Interaction	3	Interprofessional Projects (IPRO) (6)		
ITMD 411	Intermediate Software Devlpmnt	3	See Illinois Tech Core Curriculum, section E		6
ITMM 471	Project Management for ITM	3	Industrial Technology Requirements (27)		
ITMO 340	Intro Data Networks & Internet	3	INTM 301	Communications for Workplace	3
ITMO 356	Intro Open Source OS	3	INTM 315	Industrial Enterprises	3
ITMS 448	Cyber Security Technologies	3	INTM 322	Ind Project Management	3
ITMT 430	System Integration	3	INTM 404	Marketing, Sales, & Prod Intro	3
ITM Electives (General or Specialization) (18)			INTM 408	Cost Management	3
Select 18 credit hours from INTM, ITM, ITMD, ITMM, ITMO, ITMS, ITMT, and TECH		18	INTM 410	Operations Management	3
Natural Science and Engineering Requirements (10)			INTM 425	Human Resrcs Management	3
EG 225 is recommended			INTM 441	Supply Chain Management	3
See Illinois Tech Core Curriculum, section D		10	INTM 459	Issues in Ind Sustainability	3
Humanities and Social Sciences Requirements (21)			INTM Electives (Technical and/or Specialization) (21)		
PSYC 301 is recommended			Select 21 credit hours		21
See Illinois Tech Core Curriculum, sections B and C		21	(6 credit hours will also be applied as ITM Electives)		
			Total Credit Hours		142

Bachelor of Information Technology and Management/Bachelor of Industrial Technology and Management Curriculum

Semester 1	Credit Hours	Semester 2	Year 1 Credit Hours
ITM 301	3	ITM 311	3
ITMD 321	3	ITMO 340	3
INTM 301	3	INTM 315	3
Natural Science or Engineering Elective	4	MATH 180 or 230	3
Humanities 200-level Elective	3	Social Sciences Elective	3
		Natural Science or Engineering Elective	3
	16		18
Semester 1	Credit Hours	Semester 2	Year 2 Credit Hours
ITM 100	3	ITMD 362	3
ITM 313 or 312	3	ITMD 411	3
ITMD 361	3	ITMO 356	3
INTM 404	3	INTM 322	3
Natural Science or Engineering Elective	3	INTM Elective	3
Social Sciences Elective (300+)	3	Statistics Elective (MATH 425, BUS 221, PSYC 203)	3
	18		18
Semester 1	Credit Hours	Semester 2	Year 3 Credit Hours
ITMM 471	3	ITM Elective	3
ITM Elective	3	INTM 410	3
INTM 425	3	INTM Elective	3
INTM Elective	3	INTM Elective	3
INTM Elective	3	IPRO Elective I	3
Humanities Elective (300+)	3	Social Sciences Elective (300+)	3
	18		18
Semester 1	Credit Hours	Semester 2	Year 4 Credit Hours
ITMS 448	3	ITMT 430	3
ITM Elective	3	ITM Elective	3
INTM 441	3	INTM 408	3
INTM 459	3	INTM Elective	3
INTM Elective	3	IPRO Elective II	3
Humanities Elective (300+)	3	Humanities or Social Sciences Elective	3
	18		18

Total Credit Hours: 142

Information Technology and Management 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 Mgmt	3
ITMS 428	Database Security	3
Select two courses from the following: 6		
ITMO 444	Cloud Computing Technologies	3
or any ITMD electives		
Total Credit Hours		12

IT Entrepreneurship and Management

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

Code	Title	Credit Hours
ITMM 470	Fund of Mgmt for Tech Prof	3
ITMM 481	IT Entrepreneurship	3
ITMM 482	Business Innovation	3
Select one course from ITMM or the following:		
	any BUS electives at the 200-level or above	3
	or any INTM electives selected with adviser's approval	3
Total Credit Hours		12

Networking and Communications

Focuses on network applications and management.

Code	Title	Credit Hours
ITMO 441	Network Admin & Operations	3
ITMO 446	Telecomm Over Data Networks	3
Select one course from the following: 3		
ITMO 446	Telecomm Over Data Networks	3
ITMO 433	Enterprise Server Admin	3
ITMO 453	Open Source Server Admin	3
Select one course from ITMO, ITMT, or the following: 3		
ITMD 465	Rich Internet Applications	3
ITMS 443	Vulnerability Analys and Ctrl	3
ITMS 478	Cyber Security Management	3
Total Credit Hours		12

Software Development

Focuses on programming and the development of sophisticated applications.

Code	Title	Credit Hours
ITMD 415	Advanced Software Development	3
ITMD 462	Web Site App Development	3
Select two courses from the following: 6		
ITMD 412	Adv Structured & Systems Prg	3
ITMD 413	Open-Source Programming	3
ITMD 419	Topics in Software Development	3
ITMD 453	Enterprise Intelligent Device	3
ITMD 454	Mass-Market Intelligent Device	3
ITMD 455	Open-Source Intelligent Device	3
or any ITMD elective 3		
Total Credit Hours		12

System Administration

Focuses on the administration and the management of servers.

Code	Title	Credit Hours
ITMO 441	Network Admin & Operations	3
Select two courses from the following 6		
ITMO 433	Enterprise Server Admin	3
ITMO 450	Enterprise End-User Sys Admin	3
ITMO 453	Open Source Server Admin	3
ITMO 417	Shell Scripting for Sys Admin	3
ITMO 444	Cloud Computing Technologies	3
ITMO 454	Operating Sys Virtualization	3
ITMS 458	Operating System Security	3
Total Credit Hours		12

Systems Security

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

Code	Title	Credit Hours
ITMS 478	Cybersecurity Management	3
Select one course from the following: 3		
ITMO 433	Enterprise Server Admin	3
ITMO 441	Network Admin & Operations	3
ITMO 450	Enterprise End-User Sys Admin	3
ITMO 453	Open Source Server Admin	3
Select two ITMS electives 6		
Total Credit Hours		12

Web Design and Application Development

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

Code	Title	Credit Hours
ITMO 441	Network Admin & Operations	3
ITMD 462	Web Site App Development	3
Select two courses from the following;		6
ITMO 444	Cloud Computing Technologies	3
ITMD 453	Enterprise Intelligent Device	3
ITMD 454	Mass-Market Intelligent Device	3
ITMD 455	Open-Source Intelligent Device	3
ITMD 463	Intermediate Web App Develop	3
ITMD 464	Adv Web Appl Devlpmnt	3
ITMD 465	Rich Internet Applications	3
ITMD 466	Service-Oriented Architectures	3
ITMD 467	Web Systems Integration	3
ITMD 469	Topics in Application Develop	3
Total Credit Hours		12

Supply Chain Management (SCM)

Covers strategic supply chain management, inventory, information systems, warehousing and distribution, purchasing, transportation, and export/import activities.

Code	Title	Credit Hours
Select four courses from the following:		12
INTM 409	Inventory Control	3
INTM 427	E-Commerce in Mkt/Supply Chain	3
INTM 430	Transportation	3
INTM 442	Warehousing and Distribution	3
INTM 443	Purchasing	3
INTM 444	Export/Import	3
INTM 446	Manufacturing & Logistics Info	3
Total Credit Hours		12

Industrial Technology and Management Curriculum Specializations

Two industrial specializations are available in this dual degree program. To earn a specialization, the student must complete four courses within an identified focus area.

Manufacturing Technology (MT)

Covers advanced technologies, process optimization, automation, quality control, and information systems.

Code	Title	Credit Hours
Select four courses from the following:		12
INTM 406	Quality Management Systems	3
INTM 434	Manufacturing 4.0	3
INTM 435	Perf Mgmt in Food Operations	3
INTM 436	Lean Manufacturing	3
INTM 437	Smart Factory Automation	3
INTM 438	Advanced Metals Manufacturing I	3
INTM 439	Advanced Metals Manufacturing II	3
INTM 446	Manufacturing & Logistics Info	3
INTM 448	Agile Methodologies for New Product/Process Development	3
Total Credit Hours		12