

## Information Technology and Management Course to Industry Certification Mapping

Many courses in information technology relate either directly or indirectly to industry certifications. Following is a list of industry certifications that relate to courses offered by the Department of Information Technology and Management at Illinois Tech. Each course shows the level of relationship of the course content to the examination criteria of the certification(s) listed. This is indicated by the **Degree of Mapping**, in three levels: **Tight**, **Loose**, and **Very Loose**. Some courses offered by the ITM Department have no related industry certifications. These courses are not included on this list. This list is updated on an ongoing basis based on faculty input and the certification landscape; the date of this revision is **September 23, 2022**.

- **Degree of Mapping = Tight:** These courses have content directly mapped to certification examination criteria, but generally will include content extending beyond the criteria. In most cases students may still want to complete additional study to be prepared to pass the indicated certification examination, particularly if their grade in the course was less than an A or significant time has passed since completion of the course.
- **Degree of Mapping = Loose:** These courses cover a significant portion of the material found in relevant certifications, but while some reference may have been made to relevant certification criteria in the creation of the courses, these courses are not designed or intended to specifically cover the certification examination criteria. Students completing these courses will require additional study to be prepared to pass the indicated certification examination.
- **Degree of Mapping = Very Loose:** These courses have industry certifications related to the course content, but no reference was necessarily made to these certifications in the creation of the courses, and these courses are neither intended or expected to cover the certification examination criteria. While these courses will give students a foundation in the area of the certification, students completing these courses will require additional study and may require significant additional study to be prepared to pass the indicated certification examination.

Course	Industry Certification / Degree of Mapping
ITM 301 Introduction to Contemporary Operating Systems and Hardware I	CompTIA A+ - Exam Core 1 220-1101 / Tight
ITM 303 Introduction to Contemporary Operating Systems and Hardware II	CompTIA A+ - Exam Core 2 220-1102 / Tight
ITM 311 Introduction to Software Development	Oracle Java SE 8 Oracle Certified Associate (OCA) / Loose
ITM 312 Introduction to Systems Software Programming	C++ Institute CPA (C++ Certified Associate Programmer Certification) / Loose
ITM 313 Introduction to Open Source Application Development	Python Institute PCEP™ – Certified Entry-Level Python Programmer / Loose
ITM 401 Introduction to Advanced Studies I	CompTIA A+ - Exam Core 1 220-1101 / Tight
ITM 402 Introduction to Advanced Studies II	and CompTIA A+ - Exam Core 2 220-1102 / Tight
ITMD 321 Data Modeling and Applications	CIW Site Development Associate / Loose
ITMD 361 Fundamentals of Web Development	and Python Institute PCEP™ – Certified Entry-Level Python Programmer / Tight
ITMD 362 Human-Computer Interaction and Web Design	and Oracle Certified Professional, MySQL 5.7 Database Administrator / Very Loose
ITMD 411 Intermediate Software Development	Oracle Certified Professional, MySQL 5.7 Database Administrator / Very Loose
ITMD 412 Advanced Structured and Systems Programming	CIW Site Development Associate / Loose
ITMD 413 Open Source Programming	CIW Advanced HTML5 & CSS3 Specialist / Loose
ITMD 415 Advanced Software Development	and CIW User Interface Designer / Loose
ITMD 441 Web Application Foundations	Oracle Certified Professional, Java SE 8 Programmer / Loose
ITMD 444 Back-End Development	C++ Institute CPP (C++ Certified Professional Programmer) / Loose
ITMD 454 Mass-Market Intelligent Device Applications	Python Institute PCAP™ – Certified Associate in Python Programming / Loose
ITMD 455 Open-Source Intelligent Device Applications	Oracle Certified Professional, Java EE 7 Application Developer Certification / Loose
ITMD 466 Service-Oriented Architecture	CIW Advanced HTML5 & CSS3 Specialist / Loose
ITMM 471 Project Management for Information Technology and Management	and CIW JavaScript Specialist / Loose
ITMO 340 Introduction to Data Networks and the Internet	and Linux Foundation Node.js Application Developer (JSNAD) / Loose
ITMO 356 Introduction to Open Source Operating Systems	CIW Web Development Professional / Loose
ITMO 433 Enterprise Server Administration + ITMO 450 Enterprise End-User System Administration	Apple App Development with Swift / Loose
ITMO 444 Cloud Computing Technologies	Google Associate Android Developer Certification / Loose
ITMS 418 Coding Security	Architura Certified SOA Professional / Loose
ITMS 438 Cyber Forensics	CompTIA Project + / Loose
ITMS 443 Vulnerability Analysis and Control	or Project Management Institute Project Management Associate / Loose
ITMS 446 Active Cyber Defense	CompTIA Network+ / Tight
ITMS 448 Cyber Security Technologies	CompTIA Linux+ / Tight
ITMS 458 Operating System Security	or Linux Professional Institute - LPIC-1 Linux Certification / Loose
ITMS 478 Cyber Security Management	or Red Hat Certified System Administrator / Very Loose
ITMS 484 Governance, Risk, and Compliance	Microsoft Azure Administrator / Very Loose
ITMT 492 Introduction to Smart Technologies	AWS Certified Cloud Practitioner / Loose
ITMD 510 Object-Oriented Application Development	ISC <sup>2</sup> Certified Secure Software Lifecycle Professional / Very Loose
ITMD 511 Application Development Methodologies	EC-Council CHFI (Computer Hacking Forensic Investigator) / Very Loose
ITMD 512 Structured and Systems Programming	EC-Council CEH (Certified Ethical Hacker) / Loose
ITMD 513 Open Source Programming	CompTIA CySA+ (Cybersecurity Analyst) / Tight
ITMD 515 Advanced Software Programming	CompTIA Security + (with ITMS 478) / Loose
ITMD 522 Data Mining and Machine Learning	or ISC <sup>2</sup> CISSP – Certified Information Systems Security Professional / Loose

Course	Industry Certification / Degree of Mapping
ITMD-526 Data Warehousing.....	Hitachi Pentaho Data Integration Implementation HCE-5920 Exam / Loose Microsoft Certified: Azure Data Engineer Associate / Loose
ITMD 532 UML-Based Software Development .....	Object Management Group UML 2 Foundation / Loose
ITMD 536 Software Testing and Maintenance .....	ISTQB Foundation Level software testing certification (CTFL) / Loose or Quality Assurance Institute Certified Associate in Software Testing (CAST) / Loose or Global Association for Quality Management Certified Software Tester - Foundation Level (CSTFL) / Loose
ITMD 541 Web Application Foundations .....	CIW Advanced HTML5 & CSS3 Specialist / Loose and CIW JavaScript Specialist / Loose and Linux Foundation Node.js Application Developer (JSNAD) / Loose
ITMD 544 Back-End Development .....	CIW Web Development Professional / Loose
ITMD 554 Mass-Market Intelligent Device Applications .....	Apple App Development with Swift / Loose
ITMD 555 Open-Source Intelligent Device Applications.....	Google Associate Android Developer Certification / Loose
ITMD 566 Service-Oriented Architecture .....	Architura Certified SOA Professional / Loose
ITMM 571 Project Management for Information Technology and Management .....	CompTIA Project + / Loose or Project Management Institute Project Management Associate / Loose
ITMM 572 Process Engineering for Information Technology Managers .....	ABPMP Certified Business Process Professional (CBPP) / Very Loose BPM Institute Business Process Management Certification / Loose
ITMM 574 Information Technology Management Frameworks.....	ITIL 3 / ITIL 4 Certification / Loose
ITMM 586 Information Technology Auditing.....	PCI Security Standards Council Payment Card Industry Professional (PCIP) / Tight ISACA Certified Information Systems Auditor (CISA) / Loose
ITMO 533 Enterprise Server Administration + ITMO 450 Enterprise End-User System Administration .....	Microsoft Azure Administrator / Very Loose
ITMO 540 Introduction to Data Networks and the Internet .....	CompTIA Network+ / Tight
ITMO 544 Cloud Computing Technologies.....	AWS Certified Cloud Practitioner / Loose
ITMO 556 Introduction to Open Source Operating Systems.....	CompTIA Linux+ / Tight or Linux Professional Institute - LPIC-1 Linux Certification / Loose or Red Hat Certified System Administrator / Very Loose
ITMO 557 Storage Technologies .....	Dell EMC Information Storage Associate (EMCISA) / Loose
ITMS 518 Coding Security .....	ISC <sup>2</sup> Certified Secure Software Lifecycle Professional / Very Loose
ITMS 538 Cyber Forensics .....	EC-Council CHFI (Computer Hacking Forensic Investigator) / Very Loose
ITMS 543 Vulnerability Analysis and Control .....	EC-Council CEH (Certified Ethical Hacker) / Loose
ITMS 546 Active Cyber Defense.....	CompTIA CySA+ (Cybersecurity Analyst) / Tight
ITMS 548 Cyber Security Technologies .....	CompTIA Security + (with ITMS 478) / Loose or ISC <sup>2</sup> CISSP – Certified Information Systems Security Professional / Loose
ITMS 558 Operating System Security .....	EITCI EITC/IS/OS Operating Systems Security / Loose
ITMS 578 Cyber Security Management.....	CompTIA Security + (with ITMS 448) / Loose
ITMS 584 Governance, Risk, and Compliance.....	ISACA Certified in Risk and Information Systems Control (CRISC) / Very Loose or ISACA Certified in the Governance of Enterprise IT (CGEIT) / Very Loose or OCEG GRC Professional (GRCP) / Loose
ITMT 593 Embedded Systems .....	CompTIA IoT Fundamentals / Loose Arduino Education Arduino Certification / Loose

**Application of Certifications to Degree Requirement through Credit by Proficiency Examination:** Students who hold indicated certifications may be able to apply them to their degree through the Credit by Proficiency Examination process, with the certification examination results applied as their grade for the course associated with that certification. There may be additional certifications not listed here or higher-level versions of the listed certifications that will be accepted for Credit by Proficiency Examination. Determination of the applicability of any industry certification for credit through Credit by Proficiency Examination will be made by an Associate Chair of the Department. The Credit by Proficiency Examination Form may be obtained in the Office of the Registrar and a per-credit-hour fee is charged for each examination. For undergraduates, this process must be completed before a student’s final 45 credit hours of enrollment at the university.

**Course Mapping by Industry Certification**

Industry Certification	Course	Degree of Mapping
ABPMP Certified Business Process Professional (CBPP) .....	ITMM 572 Process Engineering for Information Technology Managers	Very Loose
Apple App Development with Swift.....	ITMD 454 Mass-Market Intelligent Device Applications	Loose
Apple App Development with Swift.....	ITMD 554 Mass-Market Intelligent Device Applications	Loose
Architura Certified SOA Professional.....	ITMD 466 Service-Oriented Architecture	Loose
Architura Certified SOA Professional.....	ITMD 566 Service-Oriented Architecture	Loose
Arduino Education Arduino Certification.....	ITMT 492 Introduction to Smart Technologies	Loose
Arduino Education Arduino Certification.....	ITMT 593 Embedded Systems	Loose
AWS Certified Cloud Practitioner .....	ITMO 444 Cloud Computing Technologies	Loose
AWS Certified Cloud Practitioner .....	ITMO 544 Cloud Computing Technologies	Loose
BPM Institute Business Process Management Certification .....	ITMM 572 Process Engineering for Information Technology Managers	Very Loose
C++ Institute CPA (C++ Certified Associate Programmer Certification) .....	ITM 312 Introduction to Systems Software Programming	Loose
C++ Institute CPP (C++ Certified Professional Programmer) .....	ITMD 412 Advanced Structured and Systems Programming	Loose
C++ Institute CPP (C++ Certified Professional Programmer) .....	ITMD 512 Structured and Systems Programming	Loose
CIW Advanced HTML5 & CSS3 Specialist + CIW User Interface Designer .....	ITMD 362 Human-Computer Interaction and Web Design	Loose
CIW Advanced HTML5 & CSS3 Specialist + CIW JavaScript Specialist.....	ITMD 441 Web Application Foundations	Loose
CIW Advanced HTML5 & CSS3 Specialist + CIW JavaScript Specialist.....	ITMD 541 Web Application Foundations	Loose
CIW Site Development Associate.....	ITMD 361 Fundamentals of Web Development	Loose
CIW Site Development Associate + Oracle MySQL 5.7 Database Admin .....	ITM 402 Introduction to Advanced Studies II	Loose
CIW Web Development Professional .....	ITMD 444 Back-End Development	Loose
CompTIA A+ - Exam Core 1 220-1101.....	ITM 301 Introduction to Contemporary Operating Systems and Hardware I	Tight
CompTIA A+ - Exam Core 1 220-1101.....	ITM 401 Introduction to Advanced Studies I	Tight

Industry Certification	Course	Degree of Mapping
CompTIA A+ - Exam Core 2 220-1102	ITM 302 Introduction to Contemporary Operating Systems and Hardware II	Tight
CompTIA A+ - Exam Core 2 220-1102	ITM 401 Introduction to Advanced Studies I	Tight
CompTIA CySA+ (Cybersecurity Analyst)	ITMS 446 Active Cyber Defense	Tight
CompTIA CySA+ (Cybersecurity Analyst)	ITMS 546 Active Cyber Defense	Tight
CompTIA Data+ (Data Analytics Plus)	ITMD 522 Data Mining and Machine Learning	Loose
CompTIA IoT Fundamentals	ITMT 492 Introduction to Smart Technologies	Loose
CompTIA IoT Fundamentals	ITMT 593 Embedded Systems	Loose
CompTIA Linux+	ITMO 356 Introduction to Open Source Operating Systems	Tight
CompTIA Linux+	ITMO 556 Introduction to Open Source Operating Systems	Tight
CompTIA Network+	ITMO 340 Introduction to Data Networks and the Internet	Loose
CompTIA Network+	ITMO 540 Introduction to Data Networks and the Internet	Loose
CompTIA Project+	ITMM 471 Project Management for Information Technology and Management	Loose
CompTIA Project+	ITMM 571 Project Management for Information Technology and Management	Loose
CompTIA Security+	ITMS 478 Cyber Security Management (with ITMS 448)	Loose
CompTIA Security+	ITMS 578 Cyber Security Management (with ITMS 548)	Loose
CompTIA Security+	ITMS 448 Cyber Security Technologies (with ITMS 478)	Loose
CompTIA Security+	ITMS 548 Cyber Security Technologies (with ITMS 578)	Loose
Dell EMC Information Storage Associate (EMCISA)	ITMO 557 Storage Technologies	Loose
EC-Council CEH (Certified Ethical Hacker)	ITMS 443 Vulnerability Analysis and Control	Loose
EC-Council CEH (Certified Ethical Hacker)	ITMS 543 Vulnerability Analysis and Control	Loose
EC-Council CHFI (Computer Hacking Forensic Investigator)	ITMS 438 Cyber Forensics	Very Loose
EC-Council CHFI (Computer Hacking Forensic Investigator)	ITMS 538 Cyber Forensics	Very Loose
EITCI EITC/IS/OS Operating Systems Security	ITMS 458 Operating System Security	Loose
EITCI EITC/IS/OS Operating Systems Security	ITMS 558 Operating System Security	Loose
GAQM Certified Software Tester - Foundation Level (CSTFL)	ITMD 536 Software Testing and Maintenance	Loose
Google Associate Android Developer Certification	ITMD 455 Open-Source Intelligent Device Applications	Loose
Google Associate Android Developer Certification	ITMD 555 Open-Source Intelligent Device Applications	Loose
Hitachi Pentaho Data Integration Implementation HCE-5920 Exam	ITMD-526 Data Warehousing	Loose
IEEE Certified Software Development Professional	ITMD 511 Application Development Methodologies	Loose
ISACA Certified in Risk and Information Systems Control (CRISC)	ITMS 484 Governance, Risk, and Compliance	Very Loose
ISACA Certified in Risk and Information Systems Control (CRISC)	ITMS 584 Governance, Risk, and Compliance	Very Loose
ISACA Certified in the Governance of Enterprise IT (CGEIT)	ITMS 484 Governance, Risk, and Compliance	Very Loose
ISACA Certified in the Governance of Enterprise IT (CGEIT)	ITMS 584 Governance, Risk, and Compliance	Very Loose
ISACA Certified Information Systems Auditor (CISA)	ITMM 586 Information Technology Auditing	Loose
ISC <sup>2</sup> Certified Secure Software Lifecycle Professional	ITMS 418 Coding Security	Loose
ISC <sup>2</sup> Certified Secure Software Lifecycle Professional	ITMS 518 Coding Security	Loose
ISC <sup>2</sup> CISSP – Certified Information Systems Security Professional	ITMS 448 Cyber Security Technologies	Loose
ISC <sup>2</sup> CISSP – Certified Information Systems Security Professional	ITMS 548 Cyber Security Technologies	Loose
ISTQB Foundation Level software testing certification (CTFL)	ITMD 536 Software Testing and Maintenance	Loose
ITIL 3 / ITIL 4 Certification	ITMM 574 Information Technology Management Frameworks	Loose
Linux Professional Institute - LPIC-1 Linux Certification	ITMO 356 Introduction to Open Source Operating Systems	Loose
Linux Professional Institute - LPIC-1 Linux Certification	ITMO 556 Introduction to Open Source Operating Systems	Loose
Microsoft Azure Administrator	ITMO 433 Ent Server Admin + ITMO 450 Ent End-User System Admin	Very Loose
Microsoft Azure Administrator	ITMO 533 Ent Server Admin + ITMO 550 Ent End-User System Admin	Very Loose
Microsoft Certified: Azure Data Engineer Associate	ITMD-526 Data Warehousing	Loose
Object Management Group UML 2 Foundation	ITMD 532 UML-Based Software Development	Loose
OCEG GRC Professional (GRCP)	ITMS 484 Governance, Risk, and Compliance	Loose
OCEG GRC Professional (GRCP)	ITMS 584 Governance, Risk, and Compliance	Loose
Oracle Certified Professional, Java EE 7 App Developer Certification	ITMD 415 Advanced Software Development	Loose
Oracle Certified Professional, Java EE 7 App Developer Certification	ITMD 515 Advanced Software Programming	Loose
Oracle Certified Professional, Java SE 8 Programmer	ITMD 411 Intermediate Software Development	Loose
Oracle Certified Professional, Java SE 8 Programmer	ITMD 510 Object-Oriented Application Development	Loose
Oracle Certified Professional, MySQL 5.7 Database Administrator	ITMD 321 Data Modeling and Applications	Very Loose
Oracle Java SE 8 Oracle Certified Associate (OCA)	ITM 311 Introduction to Software Development	Loose
Payment Card Industry Security Standards Council PCI Professional	ITMM 586 Information Technology Auditing	Tight
Project Management Institute Project Management Associate	ITMM 471 Project Management for Information Technology and Management	Loose
Project Management Institute Project Management Associate	ITMM 571 Project Management for Information Technology and Management	Loose
Python Institute PCAP™ – Certified Associate in Python Programming	ITMD 413 Open Source Programming	Loose
Python Institute PCAP™ – Certified Associate in Python Programming	ITMD 513 Open Source Programming	Loose
Python Institute PCEP™ – Certified Entry-Level Python Programmer	ITM 313 Introduction to Open Source Application Development	Loose
Python Institute PCEP™ – Certified Entry-Level Python Programmer	ITM 401 Introduction to Advanced Studies I	Tight
Quality Assurance Institute Certified Associate in Software Testing (CAST)	ITMD 536 Software Testing and Maintenance	Loose
Red Hat Certified System Administrator	ITMO 356 Introduction to Open Source Operating Systems	Very Loose
Red Hat Certified System Administrator	ITMO 556 Introduction to Open Source Operating Systems	Very Loose