

Department of

Computer Information Technology



Art Ericson, Department Chair

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Denise Rydalch, Secretary (208) 496-2048
<http://www.byui.edu/CIT/>*

Introduction to Computer Information Technology

Take a look at Information Technology (IT). A world of opportunity awaits you.

A career in Information Technology (IT) allows you to create solutions for real problems that trouble real people. As you create this solution with your team, you may be creating something new that has never been seen before or assembling pre-existing components. You will be making significant contributions in the organizations you work for and the every day lives of people.

There is high demand for BYU-Idaho Computer Information Technology (CIT) graduates all over the country in all segments of the economy in both small and large companies. Careers in IT pay higher than average salaries. From major financial, accounting, aviation, agriculture, medicine, retailing and software companies to federal research facilities, you and your BYU-Idaho CIT degree are wanted.

Your career in CIT can be very dynamic. Working in a team, you will interact cooperatively with the management of your organization and your potential clients to determine what the solution needs to do, what it needs to look like and how it should work. One day you may be designing software and the next designing a database. The day after that you may be involved in designing a complex network to allow your organization to communicate more effectively using video, phones or computers and then the next day you may be setting up a clustered set of web servers. CIT is a very interactive career to work in.

In short, Information Technology is the use and study of computers, networks, computer languages and databases within an organization to solve real problems.

A minimum average GPA of 1.7 (C-) is required in major courses to graduate.

BS in Computer Information Systems (681)

Take required Foundations courses

Major Requirements

No Double Counting of Major Courses

<p><i>Take these courses:</i></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td>CIT 203</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 210</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 230</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 240</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 310</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 320</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 330</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 340</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 355</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 370</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 380</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 410</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 420</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 430</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 495</td><td style="text-align: right;">1</td></tr> <tr><td></td><td style="text-align: right; border-top: 1px solid black;">43</td></tr> </table>	CIT 203	3	CIT 210	3	CIT 230	3	CIT 240	3	CIT 310	3	CIT 320	3	CIT 330	3	CIT 340	3	CIT 355	3	CIT 370	3	CIT 380	3	CIT 410	3	CIT 420	3	CIT 430	3	CIT 495	1		43	<p><i>Take 3 courses:</i></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td>CIT 336</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 345</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 351</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 385</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 425</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 436</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 440</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 455</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 460</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 470</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 480</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 485</td><td style="text-align: right;">3</td></tr> <tr><td></td><td style="text-align: right; border-top: 1px solid black;">9</td></tr> </table>	CIT 336	3	CIT 345	3	CIT 351	3	CIT 385	3	CIT 425	3	CIT 436	3	CIT 440	3	CIT 455	3	CIT 460	3	CIT 470	3	CIT 480	3	CIT 485	3		9	<p><i>Take 1 course:</i></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td>CIT 490</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 498</td><td style="text-align: right;">3</td></tr> <tr><td></td><td style="text-align: right; border-top: 1px solid black;">3</td></tr> </table>	CIT 490	3	CIT 498	3		3	<p><i>Program Notes:</i></p>
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Total Major Credits=55

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

BS in Informatics (683)

Take required Foundations courses

Major Requirements

No Double Counting of Major Courses

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Total Major Credits=55

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

Minor in Computer Information Technology (157)

Minor Requirements

No Grade Less Than C- for Minor Courses

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Total Minor Credits=24

This minor is available on the following tracks:

Fall-Winter---- YES Winter-Spring---- YES Spring-Fall---- YES

Minor in Informatics (197)

Minor Requirements

No Grade Less Than C- for Minor Courses

<p><i>Take these courses:</i></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td>CIT 203</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 320</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 355</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 380</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 385</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 420</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 425</td><td style="text-align: right;">3</td></tr> <tr><td>CIT 485</td><td style="text-align: right;">3</td></tr> <tr><td></td><td style="text-align: right; border-top: 1px solid black;">24</td></tr> </table>	CIT 203	3	CIT 320	3	CIT 355	3	CIT 380	3	CIT 385	3	CIT 420	3	CIT 425	3	CIT 485	3		24	<p><i>Program Notes:</i></p>
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Total Minor Credits=24

This minor is available on the following tracks:

Fall-Winter---- YES Winter-Spring---- YES Spring-Fall---- YES

Computer Information Technology Pre-approved Clusters

Generic CIT		
<i>Take these courses:</i>		
CIT 203	Introduction to Programming	3
CIT 230	Page Layout and Graphics	3
CIT 235	Web Page Development	3
CIT 240	Networking	<u>3</u>
	Total Credits	12
Programming		
<i>Take these courses:</i>		
CIT 203	Introduction to Programming	3
CIT 210	Object Oriented Programming I	3
CIT 310	Object Oriented Programming II	3
CIT 320	Database Design and Development	<u>3</u>
	Total Credits	12
Networking		
<i>Take these courses:</i>		
CIT 240	Networking	3
CIT 330	Operating Systems	3
CIT 340	Network Design	3
CIT 370	Systems Security	<u>3</u>
	Total Credits	12

Web		
<i>Take these courses:</i>		
CIT 230	Page Layout and Graphics	3
CIT 320	Database Design and Development	3
CIT 336	Web Page Development	3
<i>Take 1 course:</i>		
COMM 130	Visual Media	3
CS 371	Human-Computer Interaction	<u>3</u>
	Total Credits	12
Project Lifecycle		
<i>Take these courses:</i>		
CIT 203	Introduction to Programming	3
CIT 320	Database Design and Development	3
CIT 380	Project Management	3
CIT 485	Enterprise Applications	<u>3</u>
	Total Credits	12
CIT/ACCOUNTING		
<i>Take these courses:</i>		
CIT 203	Introduction to Programming	3
CIT 320	Database Design and Development	3
ACCTG 333	Advanced Spreadsheet Applications	3
ACCTG 356	Accounting Information Systems	<u>3</u>
	Total Credits	12

Computer Information Technology

Brigham Young University–Idaho 2009-2010

Course Descriptions

Credits*

CIT 138 Micro-applications 1

(1.0:1:0)

Introduction to the use of microcomputer applications in business including the use of basic operating system functions and spreadsheets.
(Fall, Winter, Spring)

CIT 139 Micro-applications B

(2.0:2:0)

Introduction to the use of microcomputers in business. Emphasis is on learning how to use spreadsheet, and database applications to solve business problems.
(Fall, Winter, Spring)

CIT 140 Micro-Applications for Business

(3.0:3:0)

Prerequisite: Basic computer literacy including the use of a word processor and file management.

Introduction to the use of microcomputers in business. Emphasis is on learning how to use spreadsheet and database applications to solve business problems.
(Fall, Winter, Spring)

CIT 203 CIT Fundamentals

(3.0:3:0)

Prerequisite: CIT 140 or permission of the instructor

An introduction to the basic concepts of computers and information technology.

CIT 210 Object Oriented Programming I

(3.0:2:3)

Prerequisite: CIT 203

An introduction to object oriented programming using the Java programming language.
(Fall, Winter, Spring)

CIT 230 Page Layout and Graphics

(3.0:3:0)

This three semester credit hour course prepares students for Web site development through a study of standards-based markup (XHTML), presentational markup (CSS) and Usability (HCI) guidelines coupled with design principles. In addition, development and optimization of web-compliant graphics and animations using Photoshop and Flash will be studied.

CIT 240 Networking

(3.0:3:0)

This course teaches general networking principles to provide an understanding of data communication protocols, transmission systems, medium and software.

CIT 298 Introductory Internship

(1.0-3.0:0:0)

Prerequisite: CIT 140, 210, 235, 240, minimum grade of C- in all CIT classes, Instructor permission.

This internship experience is an introductory experience for Computer Information Technology majors and is intended to integrate practical work experience with the cumulative knowledge and skills obtained during your education. It is expected that you will develop personal, professional and additional academic competencies during the internship. In order to accomplish this, you will need to go beyond the common experiences of a normal employee. Study, reasoning, reflection and theoretical/conceptual exploration will be required for you to develop new skills and knowledge to get the most of the internship experience.
(Fall, Winter, Spring)

CIT 310 Object Oriented Programming II

(3.0:2:3)

Prerequisite: CIT 210

This course focuses on the design and implementation of applications using an object oriented programming language. Unified Modeling Language (UML) and design patterns are used extensively in connection with exception handling, event handling, threads, data structures, database, file, and network IO, and client-server software development.
(Fall, Winter, Spring)

CIT 320 Database Design and Development

(3.0:2:3)

Prerequisite: CIT 210 or CS 165

This course covers the physical and logical design elements of relational and object-relational databases, including the definition of and organization of structures into a database catalog. It explores symbolic drawing methodologies, like Information Engineering and UML. It teaches SQL language semantics, including DDL, DML and DQL structures. It exposes students to database configuration and tuning. It demonstrates and explores using external programming languages as access points to the database server, using the Java and PHP programming languages.
(Fall, Winter, Spring)

CIT 330 Operating Systems

(3.0:3:0)

Prerequisite: IS 240

The purpose of this course is to provide a fundamental understanding of computer operating systems.
(Fall, Winter, Spring)

CIT 336 Web Page Development

(3.0:3:0)

Prerequisite: CIT 230 and 320

This course introduces PHP and MySQL databases to construct database driven dynamic Web pages. All standards introduced in CIT 230 (Web Design) are maintained. In addition, JavaScript and its AJAX implementation as well as research into the legal issues of privacy and terms of use are included
(Fall, Winter, Spring)

CIT 340 Network Design

(3.0:3:0)

Prerequisite: IS 240

Principles of network design standards and architectures. Configuration and use of networking devices including repeaters, hubs, bridges, switches and routers to create enterprise networks.
(Fall, Winter, Spring)

CIT 345 Wireless Networking

(3.0:3:0)

Prerequisite: CIT 240

This is an introductory course in Wireless Networking. The course encompasses the design, planning implementation, operation and troubleshooting of wireless communication. The material covers a comprehensive overview of technologies, security and design practices.
(Winter, Spring)

CIT 350 IT Operations Management

(3.0:3:0)

Prerequisite: CIT 240, CIT 330

This course introduces the IT organization, qualifying the business analysis, development, infrastructure, operations and support roles running small to large enterprises. It introduces students to the matrix organization structure required to manage projects concurrently with day-to-day tasks. It reviews issues with applied micro-economics; software licensing; hardware obsolescence; strategic, tactical and operational planning; outsourcing; performance metrics; and inter-organizational service-level agreements. This course teaches the management aspects of economics, organizational dynamics and operational control of IT organizations in modern corporations.
(Spring 2009, Winter 2010)

CIT 355 Decision Support Systems

(3.0:3:0)

Prerequisite: CIT 203, Junior standing.

This course introduces business decision making software and applications. It introduces students to the architecture, design, development and deployment of frameworks for decision making. It discusses Decision Support Systems (DSS), Executive Information Systems (EIS), Expert Systems (ES), and Management Information Systems (MIS). This course teaches the student how to build analytical models using non-procedural development environments, like Microsoft Excel. Topics include learning how to build what-if, sensitivity, single and multiple goal seeking analysis models, like min-max inventory models, etcetera
(Fall 2009, Spring 2010)

CIT 370 Systems Security

(3.0:3:0)

Prerequisite: CIT 240

The purpose of this course is to provide fundamental understanding of computer security principles. You will learn about confidentiality, integrity, availability, authentication and the types of attacks and malicious code that may be used against your network. Remote access, email, and protocols will also be discussed. A variety of security topologies are discussed including secure communications channels, secure internetworking devices, and network medium. You will also learn about intrusion detection system, firewalls and physical security concepts. In addition, security policies, disaster recovery and computer forensics are covered. Aside from learning the technologies involved in security, you will get to understand the daily tasks involved with managing and troubleshooting those technologies. Students will have a variety of hands-on labs to reinforce the concepts discussed in the class.
(Fall, Winter, Spring)

<p>CIT 380 Project Management (3.0:3:0) Prerequisite: Junior standing This course introduces project management concepts in focusing on project management issues, approaches and tools. It introduces how a manager can plan, organize, implement and control non-routine activities to achieve cost, schedule and performance objectives. Topics include project life cycle, scope design and control, work breakdown structures and scheduling systems. Tools include planning and PERT/CPM, Gantt, earned value control methods in the context of project control and enterprise project management tools. (Fall, Winter, Spring)</p>	<p>CIT 455 Mobile Application Development (3.0:3:0) Prerequisite: CIT 230 or COMM 310 This course introduces the student to the design, testing, and development of applications for mobile devices. The design limitations and possibilities of these small form devices is intrinsic to the learning environment. Requirements gathering, ideation, and creativity of design are covered extensively. (Fall, Spring)</p>
<p>CIT 385 Business Process Design and Management (3.0:3:0) Prerequisite: CIT 203 This course introduces process engineering concepts including establishing process boundaries, workflow process modeling, assessing existing processes, designing processes, use case scenario analysis, and assessing proposed processes using simulation and predictive calculation. (Fall, Winter)</p>	<p>CIT 460 Enterprise Development (3.0:2:3) Covers the design and development of the N-tier applications. An overview of the architecture for N-tier applications is covered with a focus on the use of effective design patterns. Different technologies to implement the MVC control pattern will be explored. The J2EE architecture will be covered in depth including Servlets, Java Server Pages, and Enterprise Java Beans. Applications that implement all parts of the MVC pattern will be designed, implemented and deployed. This class includes 5 hours of lecture and 3 hours of programming lab per week.</p>
<p>CIT 410 Systems Analysis and Design (3.0:3:0) Prerequisite: IS 235, IS 240, IS 310, IS 320 This course teaches the concepts of systems analysis and design for those desiring to work in the field of information technology. Initially, an overview of an information system and the software development life cycle (SDLC) processes are covered. Each phase of the SDLC process is then examined in depth and real experience gained through an actual project. Computer aided Software (CASE) tools will be used to design, and document an information system/project. (Fall, Winter, Spring)</p>	<p>CIT 470 System Security II (3.0:3:0) Prerequisite: CIT 240, 330, 370 The purpose of this Lab based course is to teach students techniques for securing the entire network architecture both internal and external. Students will learn how to configure and use firewalls and intrusion detection/prevention systems. In addition students will learn how to harden operating systems and secure remote access. (Winter, Spring)</p>
<p>CIT 420 Database II (3.0:3:0) Prerequisite: CIT 310, CIT 320 This course is a continuation if CIT 320 and focuses on the development of stored functions, libraries, objects, procedures and packages. Students will design and write stored database program units in PL/SQL. Students will use an Integrated Development Environment (IDE) to write and test programs against database. (Spring 2009, Winter 2010)</p>	<p>CIT 480 IT Risk Management (3.0:3:0) Prerequisite: CIT 310, CIT 320 This course will help the learner understand how risk management plays a critical role in protecting an organization from IT-related risk. Risk management is essential in protecting the mission, as well as the assets of the organization. The core concepts of risk management, threat identification, risk assessment, risk mitigation, and evaluation and assessment will be covered. (Winter, Spring)</p>
<p>CIT 425 Data Warehousing (3.0:3:0) Prerequisite: CIT 320 This course defines the theory and practice of data analysis. The course will compare and contrast the operational and analytical database models. Students will learn how to define, implement and query a database warehouse by leveraging sample data warehouses built from Enterprise Resource Planning (ERP) and Customer Resource Management (CRM) solutions. (Winter 2009, Fall 2009, Spring 2010)</p>	<p>CIT 485 Enterprise Applications (3.0:3:0) Prerequisite: CIT 320, CIT 330 This course is a capstone class that integrates design, analysis, database concepts and programming. The course will present product integration, configuration management and implementation concepts. Students will learn how to install, maintain and integrate a suite of products to deliver complex Enterprise Resource Planning (ERP) and Customer Resource Management(CRM) solution. (Fall, Winter)</p>
<p>CIT 430 Operating Systems II (3.0:3:0) Prerequisite: CIT 240, CIT 330 The purpose of this course is to provide an advanced understanding of computer operating systems and services. (Fall, Winter)</p>	<p>CIT 490 Senior Project (3.0:0:0) Prerequisite: Senior standing and permission of the instructor. This is a capstone class designed to apply all of the skills gained by the student in the development of an information system. Students will work together in a team to design and implement an information system. (Fall, Winter, Spring)</p>
<p>CIT 436 Web Server Development (3.0:2:3) Prerequisite: CIT 230 and 320 This course introduces web application architecture, design, development, deployment and security. It introduces the students to the dynamics of stateless and stateful web computing. This course also introduces AJAX computing principles and approaches. Additional topics include how to build web applications with one or more scripting languages and interacting with a relational database. (Fall, Winter, Spring)</p>	<p>CIT 495 Senior Research Paper (1.0:1:0) Prerequisite: Senior Standing, Content of Instructor This is a capstone experience for the Computer Information Technology, Business, and Accounting major. A research paper will be written and presented on a relevant Information Technology topic. It's purpose is to expand on knowledge outside of the required curriculum, and to develop professional writing and presentation skills. (Fall, Winter, Spring)</p>
<p>CIT 440 Network Design II (3.0:3:0) Prerequisite: CIT 340 This course teaches general networking principles to provide an understanding of the basic switching, WAN technologies, and intermediate routing skills. Students will learn how to install and configure switches and routers in multiprotocol internetworks using LAN and WAN interfaces, improve network performance and security, perform entry-level tasks in the planning, design, installation, operation, and troubleshooting of Ethernet and TCP/IP networks. (Fall, Spring)</p>	<p>CIT 498 Internship (3.0:0:0) Prerequisite: Senior standing and permission of the instructor. This is designed to be a capstone experience where a student applies the skills they have learned in information system in a real world environment. (Fall, Winter, Spring)</p>
	<p>CIT 499 Special Topics (3.0:3:0) Prerequisite: Permission of the instructor. This is a special topics course to address the latest advancements in information technology.</p>