Department of

Computer Information Technology

Steven Rigby, Department Chair

Bradley Armstrong, Lee Barney, Rex Barzee, Art Ericson, Kory Godfrey, Kent Jackson, Michael McLaughlin, Mark Olaveson, Steven Rigby, Blaine Robertson, Randy Somsen

Amy Staiger, Department Secretary (208) 496-3620
http://www.byui.edu/CIT/

Introduction to Computer Information Technology

Take a look at Computer Information Technology (CIT). It includes the design, development and management of systems within an organization to solve real world problems. A world of opportunity awaits you.

A career in CIT allows you to create solutions for real problems that effect real people. As you help solve these problems with your team, you may be creating new and exciting solutions that change the everyday lives of individuals. You will be making a real difference that impacts the growth and success of an organization.

There is high demand for BYU–Idaho CIT graduates all over the world in all segments of the economy in both small and large companies. Careers in CIT pay higher than average salaries. You can work in major financial, accounting, agriculture, manufacturing, medicine, retailing, or software companies, in education or government agencies, or for non-profit organizations.

Careers in CIT are dynamic. New challenges and opportunities await you every day. Working in a team, you will interact cooperatively with the management, customers, clients, and other information technology professionals to determine what the solution needs to do, what it needs to look like, and how it should work. One day you may be meeting with customers and clients, the next 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 the web, mobile devices, and computers. The next day you may be setting up a clustered set of web servers. CIT is a very interactive and interesting career in which to work.

General Advisement questions should be directed to the College of Business and Communication Advisement Center, Smith 227, (208) 496-9840.

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

Accessibility of Computer Information Technology Courses

CIT 110, CIT 111, CIT 160, CIT 240, CIT 370, and CIT 380 are available to all students.

BS in Computer Information Technology (681)

Take Required Foundations Courses (40 credits)

Major Requirements

No Double Counting of Major Courses - No Grade Less Than C- in Major Courses

CIT Core
Take these courses:

CIT 160	3
CIT 225	3
CIT 230	3
CIT 240	3
CIT 241	3
CIT 260	3
CIT 262	3
CIT 325	3
CIT 352	3
CIT 353	3
CIT 360	3
CIT 370	3
CIT 380	3
COMM 175	2
	41

CIT Electives
Take 2 courses:

CIT 261	3
CIT 336	3
CIT 341	3
CIT 345	3
CIT 381	3
CIT 425	3
CIT 460	3
CIT 465	3
CIT 470	3
CIT 485	3
	6

CIT Capstone
Take 1 course:

CIT 490	3
CIT 498	3
	3

Take this course:

CIT 495	1
	1

Program Notes:

Total Major Credits=51

Additional Elective Credits Required for Graduation=29

This major is available on the following tracks:

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

BS in Business Analytics (686)

Take Required Foundations Courses (40 credits)

Major Requirements

No Double Counting of Major Courses - No Grade Less Than C- in Major Courses

Information Systems Core Courses
Take these courses:

CIT 111	3
CIT 160	3
CIT 225	3
CIT 380	3
CIT 381	3
CIT 425	3
CIT 499R	1
cont. in next column	

cont. from previous column

ECON 150	3
ECON 215	4
ECON 255	3
ECON 278	3
ECON 388	3
ACCTG 201	3
ACCTG 202	3
B 211	4
B 212	4
B 410	3
CIT 498	3
	55

Program Notes:

Total Major Credits=55

Additional Elective Credits Required for Graduation=25

This major is available on the following tracks:

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

Minor in Computer Information Technology (202)

Minor Requirements

No Double Counting of Minor Courses - No Grade Less Than C- for Minor Courses

Required Courses	
Take these courses:	
CIT 111	3
CIT 160	3
CIT 230	3
CIT 240	3
CIT 260	3
CIT 380	3
	18

Elective Courses	
Take 2 courses:	
CIT 225	3
CIT 241	3
CIT 262	3
CIT 336	3
CIT 341	3
CIT 352	3
CIT 353	3
CIT 360	3
CIT 370	3
CIT 381	3
CIT 425	3
CIT 465	3
CIT 470	3
CIT 485	3
	6

Program Notes:

Total Minor Credits=24

This minor is available on the following tracks:

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

Minor in Business Analytics (246)

Minor Requirements

No Double Counting of Minor Courses - No Grade Less Than C- for Minor Courses

Required Courses	
Take these courses:	
CIT 111	3
CIT 160	3
CIT 225	3
CIT 381	3
ECON 150	3
ECON 255	3
	18

Take 1 course:	
ECON 215	4
FDMAT 112	4
	4
Take 1 course:	
ECON 278	3
MATH 221A	3
	3

Program Notes:

Total Minor Credits=25

This minor is available on the following tracks:

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

Computer Information Technology Concentration (D 122)

Concentration Requirements

No Double Counting of Concentration Courses - No Grade Less Than C- for Minor Courses

Required Courses	
Take these courses:	
CIT 110	3
CIT 111	3
CIT 160	3
CIT 230	3
CIT 240	3
CIT 261	3
CIT 336	3
CIT 370	3
CIT 380	3
CIT 381	3
	30

Interdisciplinary Courses	
Take these courses:	
IDS 398R	1-3
IDS 499	2
	3

Program Notes:

Total Concentration Credits=33

This concentration is available on the following tracks:

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

Computer Information Technology Certificate (C 108)

Certificate Requirements

No Grade Less Than C- for Certificate Courses

Take 5 courses:	
CIT 110	3
CIT 111	3
CIT 160	3
CIT 230	3
CIT 240	3
CIT 260	3
	15

Program Notes:

Total Certificate Credits=15

Computer Information Technology Pre-approved Clusters

Generic CIT **2500**

Take these courses:

CIT 160	CIT Fundamentals	3
CIT 230	Web Frontend Development	3
CIT 240	Networking	3
CIT 336	Web Backend Development	3
	Total Credits	**12**

Programming **2501**

Take these courses:

CIT 111	Introduction to Databases	3
CIT 160	CIT Fundamentals	3
CIT 230	Web Frontend Development	3
CIT 260	Object Oriented Programming I	3
	Total Credits	**12**

Networking **2502**

Take these courses:

CIT 240	Networking	3
CIT 241	Network Design	3
CIT 353	Operating Systems 2	3
CIT 370	Systems Security	3
	Total Credits	**12**

Web **2503**

Take these courses:

CIT 111	Introduction to Databases	3
CIT 230	Web Frontend Development	3
CIT 336	Web Backend Development	3

Take 1 course:

COMM 130	Visual Media	3
CS 371	Human-Computer Interaction	3
	Total Credits	**12**

Project Lifecycle **2504**

Take these courses:

CIT 111	Introduction to Databases	3
CIT 160	CIT Fundamentals	3
CIT 225	Database Design and Development	3
CIT 380	Project Management	3
	Total Credits	**12**

Course Descriptions — Credits*

CIT 110 Introduction to Excel (3:3:0)

Introduction to the use of spreadsheets in business. Emphasis is on learning spreadsheet literacy concepts and a popular spreadsheet application to solve business problems.
(Winter, Spring, Fall)

CIT 111 Introduction to Databases (3:3:0)

This course covers the basic elements of database management systems. It introduces students to the concepts of logical and physical relationships in a data model and the concepts of inner and outer joins. Students will use a computer aided software engineering (CASE) tool to design, create, and query a database.
(Winter, Spring, Fall)

CIT 160 Introduction to Programming (3:3:0)

An introduction to the basic concepts of computers and information technology. Learn the basics of computer hardware and the binary and hexadecimal number systems. Design algorithms to solve simple computing problems and will write computer programs using Boolean logic, control structures, and functions. Read and draw UML use case and class diagrams and will learn basic set and join theory.
(Winter, Spring, Fall)

CIT 225 Database Design and Development (3:2:3)

Prerequisites: CIT 160 or CS 124

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 Java and PHP programming languages.
(Winter, Spring, Fall)

CIT 230 Web Frontend Development (3:3:0)

This course prepares students to develop web sites through a study of Hypertext Markup Language (HTML5), Cascading Style Sheets (CSS), Usability principles, and User Interface (UI) principles.
(Winter, Spring, Fall)

CIT 240 Networking (3:3:0)

This course teaches general networking principles to provide an understanding of data communication protocols, transmission systems, media, and software.
(Winter, Spring, Fall)

CIT 241 Network Design I (3:3:0)

Prerequisite: CIT 240

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

CIT 260 Object Oriented Programming I (3:2:3)
Prerequisite: CIT 160
An introduction to object oriented programming using the Java programming language. Students will write computer programs using primitive data types, control structures, Java Swing classes, and objects. Students will read and draw UML class diagrams and will use Java swing to write programs with a graphical user interface.
(Winter, Spring, Fall)

CIT 261 Mobile Application Development (3:3:0)
Prerequisite: CIT 160 and CIT 230
This course is designed to begin to give you the skills required to create mobile device applications for modern mobile devices. Because of this, the course focuses on how to solve larger, ill-structured business problems by designing and creating applications using a framework that lets you install cross platform JavaScript applications on the devices.
(Winter, Spring, Fall)

CIT 262 System Analysis and Design (3:3:0)
Prerequisite: CIT 260
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.
(Winter, Spring, Fall)

CIT 298 Introductory Internship (1-3:0:0)
Prerequisites: CIT 110, CIT 240, and CIT 260
This course is designed as a CIT sophomore-level capstone experience where a student applies the skills previously learned in computer information technology/information systems in a real-world environment.
(Winter, Spring, Fall)

CIT 325 Database Administration (3:3:0)
Prerequisites: CIT 225 and CIT 260
This course is a continuation of 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 us an Integrated Development Environment (IDE) to write and test programs against database.
(Winter, Spring, Fall)

CIT 336 Web Backend Development (3:3:0)
Prerequisite: CIT 230
This course prepares students to develop web sites by continuing the implementation of concepts from the Web Frontend development course and adding backend components (MySQL databases, PHP, SQL, and the MVC design pattern) to create dynamic web sites.
(Winter, Spring, Fall)

CIT 341 Network Design II (3:3:0)
Prerequisite: CIT 240
Teaches general networking principles to provide an understanding of the basic switching, WAN technologies, and intermediate routing skills. Learn how to install and configure switches and routers in multiprotocol inter-networks using LAN and WAN interfaces, improve network performance and security, perform entry-level tasks in the planning, design, installation, operations, and troubleshooting of Ethernet and TCP/IP networks.
(Winter, Spring, Fall)

CIT 345 Wireless Networking (3:3:0)
Prerequisite: CIT 240
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, Fall)

CIT 352 Operating Systems I (3:3:0)
Prerequisite: CIT 240
Provides a fundamental understanding of computer operating systems focusing on Linux.
(Winter, Spring, Fall)

CIT 353 Operating Systems II (3:3:0)
Prerequisite: CIT 240
Provides students with the administration skills to plan, install/configure, and manage Windows 2008 servers in a corporate environment.
(Winter, Spring, Fall)

CIT 360 Object Oriented Programming II (3:2:3)
Prerequisite: CIT 262
Designed to allow students to experience a work-like environment. It pulls together Software Engineering and Object Oriented Programming techniques learned in previous courses. Based on customer requirements, you will learn to find, evaluate, and select solutions to problems that have many "right" solutions. You will also learn new Object Oriented and software production techniques.
(Winter Spring Fall)

CIT 370 Systems Security I (3:3:0)
Provides students with an overview of the field of Information Security and Assurance. Students will be exposed to the spectrum of security activities, methods, methodologies, and procedures. Offers a comprehensive guide for anyone wishing to take the CompTIA Security SY0-301 Certification Exam. Provides an introduction to the fundamentals of network security, including compliance and operational security; threats and vulnerabilities; application, data, and host security; access control and identity management; and cryptography. Covers new topics in network security as well, including psychological approaches to social engineering attacks, web application attacks, penetration testing, data loss prevention, cloud computing security, and application programming development security.
(Winter, Spring, Fall)

CIT 380 Project Management (3:3:0)
Course Fees: $6.00
Designed to help students learn to use project management knowledge, tools, and techniques to plan, implement, and manage coordinated work efforts and solve business problems. Provides an opportunity to organize and plan the elements of one-time, unique endeavors that add value to an organization. Emphasis is on developing the people skills as well as the tools, techniques, and methods of professional project managers such as Microsoft Project Professional.
(Winter, Spring, Fall)

CIT 381 Business Intel and Analytics (3:3:0)
Prerequisite: CIT 160
Introduces business intelligence and analytic software and applications. It introduces students to the architecture, design, development, and deployment of frameworks for analysis within decision-making lifecycles. It introduces students to the principles and characteristics of Business Intelligence Systems, Decision Support Systems (DSS), Executive Information Systems (EIS), Expert Systems (ES), Management Information Systems (MIS), Artificial Intelligence, and Game Theory. Students will build analytical models using non-procedural development environments like Microsoft Excel, SQL Server Analysis Services (SSAS), R programming language, and similar platforms. Topics include learning how to build multidimensional data cubes, tabular BI semantic models, data mining, decision trees, linear and logistic regression, Naive Bayes, cluster, association rules, time series, and neural network analysis techniques.
(Winter, Spring, Fall)

CIT 425 Data Warehousing (3:3:0)
Prerequisite: CIT 225
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 levraging sample data warehouses built from Enterprise Resource Planning (ERP) and Customer Resource Management (CRM) solutions.
(Winter, Spring, Fall)

CIT 460 Enterprise Development (3:2:3)
Prerequisites: CIT 225 and CIT 360
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.
(Winter, Spring, Fall)

* Credit Description (Credit Hours : Lecture Hours per week : Lab Hours per week)

CIT 465 iOS Application Development (3:3:0)

Prerequisites: CIT 260 or CS 165

This course is designed to give you experience with syntactical and advanced development techniques within the iOS development ecosystem. These techniques are used to solve ill-structured problems like those encountered in businesses and consulting firms.
(Winter, Spring, Fall)

CIT 470 System Security II (3:3:0)

Prerequisites: CIT 240, CIT 352, and CIT 370

The purpose of this lab based course is to teach students techniques for securing the entire network architecture both internally and externally. 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, Fall)

CIT 485 Enterprise Applications (3:3:0)

Prerequisites: CIT 225 and CIT 352

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.
(Winter, Spring, Fall)

CIT 490 Senior Project (3:3:0)

The course is designed to allow each student to design, build, and implement a project of their own choosing to further individual learning and career goals. Students will identify an area of interest and propose a project plan to pursue and achieve those goals primarily through the analysis, design, development, and implementation of a fully functional information system or completion of a professional-level certification. Students will work with faculty mentors on an individual basis for project approval and achieving the project objectives.
(Winter, Spring, Fall)

CIT 495 Senior Practicum (1:1:0)

This is a capstone experience for the Computer Information Technology major. There are two options available: A research paper on a relevant Information Technology topic or participate in service learning. The purpose of this course is to build on the knowledge you have learned in the Computer Information Technology major.
(Winter, Spring, Fall)

CIT 498 Internship (3:0:0)

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.
(Winter, Spring, Fall)

CIT 499R Special Topics (1-3:1-3:0)

Repeatable Course: may take a maximum of 4 times

This is a special topics course to address the latest advancements in information technology.
(Winter, Spring, Fall)

* Credit Description (Credit Hours : Lecture Hours per week : Lab Hours per week)