


# 2017-2018 Class Descriptions

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## ACCOUNTING (ACC)

### ACC100 Fundamentals of Accounting

3 Credits (3 Lectures) 



The basics of accounting for a small business with emphasis on recording transactions, posting to the general ledger, preparing financial statements, recording payroll, accounting for inventory and accrual accounting. *Prerequisite or corequisite: RDG100.*

### ACC121 Income Tax Fundamentals

3 Credits (3 Lectures) 

Theory, rules and procedures used in preparing federal income tax returns for individuals. *Prerequisite: RDG100.*


### ACC201 Financial Accounting

3 Credits (3 Lectures) ACC 2201  

Theory and practice of accounting applicable to the accumulation, reporting and uses of financial information for corporations. *Recommended: Students who struggle with numerical data may best be advised to first complete ACC100 which places heavy concentration on the mechanics of accounting. Prerequisite: RDG100.*


### ACC202 Managerial Accounting

3 Credits (3 Lectures) ACC 2202 

Selection and analysis of accounting information for internal organization use by management. *Prerequisite: ACC201 .*


### ACC222 Payroll Accounting

3 Credits (3 Lectures)

Functions and practical operation of payroll accounting, with examinations of current payroll tax laws, methods of computing wages and salaries, timekeeping methods and microcomputer software for payroll systems. *Prerequisites: ACC100 OR ACC201 .*

### ACC226 Accounting with QuickBooks Pro®


3 Credits (3 Lectures)

Practical application of accounting utilizing QuickBooks Pro. Topics covered will include the general ledger, accounts receivable, accounts payable, job costing, payroll and inventory. *Prerequisite: ACC100 OR ACC201 .* *Note: Students with accounting experience may request an instructor waiver.*


### ACC227 Accounting with Sage 50 Complete®

3 Credits (3 Lectures)

Practical application of accounting concepts utilizing Sage 50 Complete® (formerly Peachtree®). This course covers: accounts payable, accounts receivable, payroll, inventory, job costing, fixed assets, and time and billing features of Sage 50


Complete®. *Prerequisite: ACC100 OR ACC201 .* *Note: Students with accounting experience may request an instructor waiver.*

### BUS100 Introduction to Business

3 Credits (3 Lectures) 


Business administration trends, technology, communication, ethics, economics, business organization and ownership including entrepreneurship, management and production, marketing, finances, laws and regulations and human resources management. *Prerequisite or corequisite: RDG100.*

### BUS101 Business Mathematics

3 Credits (3 Lectures) 


A review of arithmetical fundamentals, fractions, decimals and percentages as applied in cash and trade discounts, business statements, commissions, depreciation, interest, negotiable instruments and payroll problems. *Prerequisites: MAT082 or higher; Prerequisite or corequisite: RDG100.*

### BUS120 Personal Money Management

3 Credits (3 Lectures) 

A study of consumer decision-making in a technological society where individuals have limited time and income, including planning and budgeting for food, shelter, transportation, healthcare, insurance, savings, investments, debt and taxes. *Prerequisite: RDG100.*

### BUS122 Small Business Management

3 Credits (3 Lectures) 

Factors in planning, owning and managing a small business with use of case materials to develop entrepreneurship and managerial/marketing skills. *Prerequisite: RDG100. Offered every Fall and Spring.*


### BUS123 Business Relations

3 Credits (3 Lectures)  

This course explores the development of interpersonal skills necessary and increasing the understanding of the underlying dynamics of human interactions necessary for improving supervision and leadership in the workplace. Topics include work/life balance, communication processes, self-esteem, leadership/management styles and theories, conflict and stress management, developing organizational cultures which value diversity, traits of great presenters and ethics. *Prerequisite or corequisite: RDG100.*

ICON LEGEND: AGEC:  Intensive Writing: *IW* Reading Required: RDG100:  SUN Course: 

## **BUS180 Introduction to Marketing**

3 Credits (3 Lectures) 

An introduction to marketing, including product, principles, practices and total marketing process planning and analysis. *Prerequisite or corequisite: RDG100.*

## **BUS190 Principles of Management and Leadership**

3 Credits (3 Lectures)  


A comparative examination of classic and contemporary theories of management and leadership to include the social, ethical, legal and team-building implications of workplace issues. *Prerequisite or corequisite: RDG100.*

## **BUS196 Applied Business Internship**

1 Credit (1 Internship)

Designed for students who have successfully completed at least 15 college credits toward a certificate or degree, this job readiness and internship course helps students develop professional job skills and apply those skills to a 45-hour internship. CAC's Student Services Experiential Learning Coordinator will provide assistance in locating internship site. *May be taken three times for credit. Prerequisite: Successfully complete a minimum of 15 college-level credits.*


## **BUS201 Legal Environment of Business**

3 Credits (3 Lectures) 



An examination of the legal framework governing rules of conduct among businesses and the legal implications of establishing business policy. *Prerequisite: RDG100.*

## **BUS207 Business Communications**



3 Credits (3 Lectures)

Written, oral and visual communication delivered through digital and non-digital channels with an emphasis on the shift to mobile communications and connectivity in business today. *Prerequisite: ENG101 .*


## **BUS208 Business Statistics**

3 Credits (3 Lectures) BUS 2201  

A study of business applications using descriptive and inferential statistics, measurement of relationships and statistical process control management techniques.

*Prerequisites: RDG100; MAT151 ; (CIS120  or instructor consent).*

## **BUS220 Retail Management**

3 Credits (3 Lectures) 

Management principles of retailing with application to small, medium, and large stores, evaluating store locations, layout, employment, merchandising management and current trends in retailing. *Prerequisite or corequisite: RDG100. Offered every Fall.*

## **BUS250 Introduction to Entrepreneurship**

3 Credits (3 Lectures)

Research, develop and write detailed start-up business plans to create a successful business. Note: this course is a combination of BUS250A, BUS250B, BUS250C, and BUS250D.

## **BUS250A Entrepreneurship - Introduction**

.75 Credit (.75 Lecture)

Investigate business ideas, examine traits of successful entrepreneurs, assess business opportunities and feasibility, and evaluate legal structures and management infrastructure.

## **BUS250B Entrepreneurship – Market Planning**

.75 Credit (.75 Lecture)

Conduct research on a chosen product/service in relation to the industry, competition and other market considerations. *Prerequisite: BUS250A.*

## **BUS250C Entrepreneurship – Financial Planning**

.75 Credit (.75 Lecture)

Project the financial situation of a business concept including needed start-up funds, pricing strategies and sources of financing using break-even analysis, basic cash accounting systems and financial ratios. *Prerequisites: BUS250B.*

## **BUS250D Entrepreneurship – The Business Plan**

.75 Credits (.75 Lecture)

Finalizing the business planning activities required for the successful launching of a new venture. *Prerequisite: BUS250C.*


## **BUS260 Applied Business Seminar**

3 Credits (3 Lectures)

This is a capstone course that includes community service learning project experience or possible internships for students completing degree requirements. Students develop career goals, professional job skills and collaborate as a team to research problems and critique actual local and global business community situations. Open to students who have successfully completed a minimum of 30 college credits.

*Prerequisites: CIS110 or CIS120  and successful completion of 30 college credits. Offered every fall and spring.*

## **BUS292 Fundamentals of Logistics – Organizational Management**

3 Credits (3 Lectures) 

Introduction to the fundamentals of logistics, including procurement, inventory, transportation, warehousing, materials handling, packaging, information management, sustainability and international logistics of supply chain and management. *Prerequisite: RDG100. Offered every Fall.*

ICON LEGEND: AGEC:  Intensive Writing: *IW* Reading Required: RDG100:  SUN Course: 

## **CBA102A Workshop for MS Word**

.5 Credit (.5 Lecture)

Introduction to MS Office Word using basic skills needed to create, format and edit business documents.

*Satisfactory/Unsatisfactory grading option is available.*

*Prerequisites: Basic Windows and file management knowledge.*

## **CBA110A Computers for Beginners**

1 Credit (1 Lecture)

Introduction to microcomputers, Microsoft Windows operating system, Microsoft programs and accessories and Internet Explorer. *Satisfactory/Unsatisfactory grading option is available.*

## **CBA110C MS Windows Basic**

1 Credit (3 Labs)

Introduction to Microsoft Windows operating system, programs, and file management.

## **CBA111A Internet**

**Previously known as CBA111A Internet Explorer**

1 Credit (3 Labs)

An introduction to the internet using browsers, searches and emails. *Recommended: Basic Windows and file management knowledge.*

## **CBA112A MS Word Basic**

1 Credit (3 Labs)

Introduction to Microsoft Word covering the basics of creating business documents. *Recommended: Basic Windows and file management knowledge.*

## **CBA112B MS Word Intermediate**

1 Credit (3 Labs)

Create multi-paged documents and web pages with enhance styles, charts and lists in MS Word. *Prerequisites: CBA112A or instructor consent. Recommended: Basic Windows and file management knowledge.*

## **CBA112C MS Word Advanced**

1 Credit (3 Labs)

Build advanced business documents that include macros, navigation, hyperlinks and forms in MS Word. *Prerequisites: CBA112B or instructor consent. Recommended: Knowledge of computer basics and file management.*

## **CBA113A MS Excel Basic**

1 Credit (3 Labs)

Introduction to MS Excel covering basic spreadsheets and charts. *Recommended: Basic Windows and file management knowledge.*

## **CBA113B MS Excel Intermediate**

1 Credit (3 Labs)

Use MS Office Excel financial functions, database tools and enhanced, specialty charts to process and display data. *Prerequisites: CBA113A or instructor consent.*

## **CBA113C MS Excel Advanced**

1 Credit (3 Labs)

Use Data analysis, PivotTables and Macros in MS Excel to solve business problems. *Recommended: File management and Operating system knowledge. Prerequisite: CBA113B or instructor consent.*

## **CBA114A MS Access Basic**

1 Credit (3 Labs)

Introduction to MS Access and database basics.

## **CBA114B MS Access Intermediate**

1 Credit (3 Labs)

Analyze database designs; enhance queries, forms and reports; and create subforms and subreports in MS Access.

*Prerequisite: CBA114A.*

## **CBA114C MS Access Advanced**

1 Credit (3 Labs)

Create advanced queries, reports, macros, and modules and manage a database and its objects in MS Access.

*Prerequisite: CBA114B.*

## **CBA116A MS PowerPoint Basic**

1 Credit (3 Labs)

Introduction to creating, editing and delivering basic presentations using MS PowerPoint.

## **CBA116B MS PowerPoint Advanced**

1 Credit (3 Labs)

Build and deliver professional MS PowerPoint presentations with advanced graphics, tables, charts and templates

*Prerequisite: CBA116A.*

## **CBA117A MS Publisher Basic**

1 Credit (3 Labs)

Create simple publications using MS Publisher, including use of wizards, templates, images, graphic boxes, and other special enhancements.

## **CBA117B MS Publisher Intermediate**

1 Credit (3 Labs)

Create customized publications, business forms, tables and web pages using MS Publisher. *Prerequisite: CBA117A.*

## **CBA118 MS Outlook**

1 Credit (1 Lecture)

Use Microsoft Outlook to send, receive and organize email, create and organize contacts, and schedule appointments and tasks. *Satisfactory/Unsatisfactory grading option is available.*

## **CBA122A MS Word Module 1**

2 Credits (1 Lecture, 3 Labs)

Basic features of Microsoft Word necessary to create business, educational, and personal documents that include tables, citations, graphics, and templates. *Recommended: Basic Windows and file management knowledge.*

## **CBA122B MS Word Module 2**

2 Credits (1 Lecture, 3 Labs)

Advanced features of Microsoft Word for mailings, directories, collaboration, productivity, web publishing, forms, and macros. *Prerequisite: CBA122A.*

## **CBA133A Spreadsheet Applications in Excel**

3 Credits (2 Lectures, 3 Labs)

Create, format, and print both structured and "what-if" spreadsheets using formulas and functions, charting, tables and analysis. Skills learned will cover the Core Level skills for Microsoft Office Specialist (MOS) Certification: Microsoft Office Excel 2013. *Prerequisites: Basic Windows and file management knowledge; BUS101 OR MAT092.*

## **CBA133B Advanced Spreadsheet Applications in Excel**

3 Credits (2 Lectures, 3 Labs)

Use of advanced features of MS Excel to import and export data, use templates, generate reports, use macros, audit a worksheet and use analysis tools. Skills learned will include the Excel 2013 Part One and Part Two Level skills for Microsoft Office Specialist (MOS) certification. *Prerequisite: CBA133A. Recommended: Basic accounting knowledge.*

## **CBA134A Database Management In Access**

3 Credits (2 Lectures, 3 Labs)

Design and create relational databases. Produce the following database objects: a query, report, and form on the data and publish to the Web. Skills learned will cover the Core Level skills for Microsoft Office Specialist (MOS) Certification: Microsoft Office Access 2013. *Prerequisites: Basic Windows and file management knowledge.*

## **CBA134B Advanced Database Management in Access**

3 Credits (2.75 Lectures, 1 Lab)


Use of advanced features of software to customize a database, do advanced queries and reports, automate tasks and prepare supporting documentation. *Prerequisite: CBA134A.*

## **CBA212 Adobe Flash Animation**

3 Credits (2 Lectures, 3 Labs)

Production of high impact web animation, such as animated logo, navigation controls, long-form animation and web applications. *Satisfactory/Unsatisfactory grading option is available. Prerequisite: CIS114.*

## **CIS110 Fundamentals of Computer Literacy**

3 Credits (2 Lectures, 3 Labs) 

Introduction to microcomputer technology, including terminology, software applications, operating systems, tools, basic set up and maintenance. Also includes Internet searches, and evaluation of websites' validity and reliability of information. Use Microsoft (MS) Word, MS Excel, MS Access and MS PowerPoint to analyze data, solve problems, and present solutions. *Not designed for CIS degree or CIS Certificate seekers. Prerequisite RDG100. Consult an Academic Advisor as to how this course meets CAC's Computer Competency degree requirement.*

## **CIS111 Introduction to the Internet**


2 Credits (2 Lectures)

An introduction to the structure, tools and terminology of the Internet relating to web browsers, email, search engines, communications, security and e-commerce. *Recommended: Basic computer skills including file management.*

## **CIS112 Web Design Fundamentals with HTML**

**Previously known as CIS112 Web Page Design Fundamentals**

3 Credits (2 Lectures, 3 Labs)

Design and build web pages using HTML5 and Cascading Style Sheets. *Prerequisite: CBA110C or CIS110 or CIS120 *  
*Recommended: Computer proficiency, file management and technical terminology.*

## **CIS113 E-Commerce and Social Media**


3 Credits (3 Lectures)

Introduction to Electronic Commerce and Social Media: including marketing, advertising, digital payment systems, professionalism, and ethical, legal and security considerations. *Recommended: Basic computer skills, including file management.*

## **CIS114 Web Development Tools**



**Previously known as CBA210 Web Development Tools**

3 Credits (2 Lectures, 3 Labs)

Theory, design and Web construction covering: information architecture, Web project management, scenario development, performance evaluations and browser incompatibility. Create and manage websites and applications using current tools in areas such as content management, photo editing, multimedia, HTML and CSS. *Prerequisite: CIS120 *




## **CIS120 Survey of Computer Information Systems**

3 Credits (2 Lectures, 3 Labs) CIS1120  

Survey of computer information systems, fundamental computer concepts, programming techniques, networking and emerging technologies. Hands-on experience with Microsoft Office application software with an emphasis on database and spreadsheets for problem solving. *Prerequisite: RDG100. Consult an Academic Advisor as to how this course meets CAC's Computer Competency degree requirement.*



## **CIS121 Microcomputer Operating System Fundamentals**

3 Credits (2 Lectures, 3 Labs) 

Installations, administrations, upgrades, configuration and diagnostics of a currently-supported microcomputer operating system used in business organizations. Registry and Commandline techniques to optimize and customize a microcomputer operating system. *May lead to Microsoft Certification. Prerequisite: RDG100.*


## **CIS123 Introduction to Programming**

3 Credits (2 Lectures, 3 Labs)

Concepts of problem solving using an object-oriented programming language such as Java. Topics include data types, control structures, classes, arrays, methods and argument passing, iteration, inheritance and programming and documentation style. *Prerequisite: CIS120  or ERG102 *


## **CIS130 Networking Essentials**

3 Credits (2 Lectures, 3 Labs)

Introduction to networking principles. Topics include: seven layered Open Systems Interconnection (OSI) Model of networking, physical and logical network topologies, networking protocols, network services, network fault tolerance and hardware/software devices used in a network. *May lead to Network+ Certification. Satisfactory/Unsatisfactory grading option is available. Prerequisite: CIS120  . Offered every Spring.*


## **CIS135 Principles of Telephony and Telecommunications**

3 Credits (3 Lectures)

The history of telecommunications and telephony technologies, including the underlying electronics, transmission media, voice, wireless, data communication solution functions and features. This course also covers wide area connectivity, Internet-enabled communications, telephony network management, policies and contracts. *Satisfactory/Unsatisfactory grading option is available. Prerequisite: CIS120  . Offered every Spring.*

## **CIS150 Windows Server**

3 Credits (2 Lectures, 3 Labs)

A study of a currently active and deployed Microsoft server network operating system including Active Directory, security policy, group policies, Internet Information Server (IIS), configure Domain Name Services (DNS), file and print services, and building trust relationship between servers. *May lead to Microsoft Certification. Satisfactory/Unsatisfactory grading option is available. Prerequisites: CIS120  CIS121.*

## **CIS152 Windows Network Infrastructure**

3 Credits (2 Lectures, 3 Labs)

Windows networking class where students learn about and complete hands-on labs to configure multiple servers in a network using currently-supported operating systems. Topics covered include Active Directory configuration, DNS naming services, connectivity and security services, managing IP routing, remote access, IP security, network address translation and virtual private networking. *May lead to Microsoft Certification. Satisfactory/Unsatisfactory grading option is available. Prerequisites: CIS130 and CIS150. Offered every Fall.*


## **CIS153 Network Security**

3 Credits (2 Lectures, 3 Labs)

Identify security risks and plan and design Windows network security solutions on currently-supported operating systems used in business organizations by securing network resources, services, communications, remote access users and designing secure access to the Internet. *May lead to Security+ Certification. Satisfactory/Unsatisfactory grading option is available. Prerequisites: CIS130 and CIS150. Offered every Fall*

## **CIS157 Computer Forensics and Investigation**

3 Credits (2 Lectures, 3 Labs)

Introduction to the acquisition, authentication, reconstruction, examination and analysis of data stored on electronic media. Topics include: ethics, rules of evidence, hardware and software tools, various operating systems, forensic lab setup and the investigational process. *Satisfactory/Unsatisfactory grading option is available. Prerequisites: CIS120  , CIS121.*

## **CIS170 JavaScript Programming**

3 Credits (2 Lectures, 3 Labs)

Design client-side, platform-independent solutions using the JavaScript language covering JavaScript programs, JavaScript object model, control program flow, validate forms, animate images, target frames and cookies. *Prerequisite: CIS112 or CIS114.*

## **CIS172 Fundamentals of Ruby**

### **Programming**

*3 Credits (2 Lectures, 3 Labs)*

Fundamentals of the Ruby programming language. Course covers the most important features of Ruby, object-oriented design, regular expressions, operators, arrays, file processing, classes and modules, exception handling and various toolkits and frameworks. *Satisfactory/Unsatisfactory grading option available. Prerequisite: CIS123.*

## **CIS176 Python Programming**


*3 Credits (2 Lectures, 3 Labs)*

Introduction to the Python programming language. Covers the basic programming constructs of Python, including basic data types, control structures, decision constructs, regular expressions, input and output techniques, functions, object-oriented design, lists, dictionaries, file I/O and exception handling. *Satisfactory/Unsatisfactory grading option available. Prerequisite: CIS123.*

## **CIS178 Database Fundamentals and Programming**

**Previously known as CIS129 Database Fundamentals**

*3 Credits (2 Lectures, 3 Labs)*

Fundamentals of relational database management systems and their use in business environments. Topics include: database classifications, data models with extensive coverage of the relational model, entity-relationship and extended entity models, normalization, advanced data modeling and Structured Query Language (SQL) programming. Students design and implement a real-world relational database and create complex SQL queries to retrieve data from the database. *Prerequisite: CIS120 .*

## **CIS181 C#.NET**

*4 Credits (3 Lectures, 3 Labs)*

Object-oriented programming language to create visual applications for Windows, MS Office, the web, controls and more. Created to work within the .NET framework. *Satisfactory/Unsatisfactory grading option is available. Prerequisite: CIS123.*

## **CIS210 Cloud Computing**

*3 Credits (3 Lectures)*

Cloud Computing theory and application, including Cloud Computing network design and connectivity, server management, best-practices, security and provider service level agreements. Case studies of industry examples are used as applications to reinforce the theories discussed. *Prerequisite: CIS152. Offered every Spring.*


## **CIS213 Linux Server**

*3 Credits (2 Lectures, 3 Labs)*

Learn the fundamentals of working on the Linux platform including installation, file system management and administration. There is an emphasis on the command-line BASH shell command interface, and also an introduction to the GUI options with Linux. Students learn about initialization options, how to manage processes and operating system utilities, and administration tasks, including network configurations. *May lead to Linux Certification. Prerequisite: CIS130 and CIS150. Offered every Fall.*

## **CIS214 Application Development in Excel**

*3 Credits (2 Lectures, 3 Labs)*

Application development in Microsoft Excel focusing on the programming behind developing detailed spreadsheet applications with games. Content includes Visual Basic for Applications (VBA) fundamentals, an enhanced review of Macros, XML and Excel objects. *Satisfactory/Unsatisfactory grading option available. Prerequisites: CIS123 OR (CIS120  and CBA133A). Recommended: CBA133A is recommended for programming students.*

## **CIS215 CISCO CCNA Routers**

*3 Credits (2 Lectures, 3 Labs)*

Learn OSI internetworking, Ethernet networking, TCP/IP, subnetting and Variable Length Subnet Masks (VLSNs) and how to design a network design using VLSNs. Learn the Cisco IOS (Internetworking Operating System) and command-line interfaces. Develop management skills with router configurations, including status and dynamic routing with various protocols including RIP, RIPv2, EIGRP and OSPF. *May lead to CISCO CCNA (Cisco Certified Network Associate) Certification. Prerequisites: CIS130 and CIS150. Offered every Spring.*

## **CIS216 Java Programming**



*4 Credits (3 Lectures, 3 Labs)*

Thorough coverage of class construction, inheritance, Applets Exception Handling, String Buffer class and Swing objects oriented techniques. Course is also appropriate for those building on experiences in another programming language. *May lead to Sun Program Developer Certification. Satisfactory/Unsatisfactory grading option is available. Prerequisite: CIS123.*

## **CIS217 Application Development in Access**

3 Credits (2 Lectures, 3 Labs)

Applications development in Microsoft Access focusing on the programming behind developing database applications, including Visual Basic for Applications (VBA) fundamentals, Macros, Structured Query Language (SQL) and data source connectivity using ADO (ActiveX Data Objects). The course also covers an enhanced review of tables, queries, forms and reports. *Satisfactory/Unsatisfactory grading option is*

*available. Prerequisites: (CIS120  AND CIS123) OR (CIS120  AND CBA134A). Recommended: CBA134A recommended for programming students.*

## **CIS218 C++ Programming**

4 Credits (3 Lectures, 3 Labs)


Comprehensive coverage of C++ programming and data structure topics through a problem-solving approach. May lead to IBM Developer Certification.

*Satisfactory/Unsatisfactory grading option is available. Prerequisite: CIS123.*

## **CIS219 Exchange Server**

3 Credits (2 Lectures, 3 Labs)

Using a currently-supported version of Exchange software, students learn how to load and configure an Exchange environment to support a highly-available resilient e-mail environment. Students learn how to administer Exchange, including designing an e-mail solution, configuring connectors, client access and work with recipients and mailboxes. Skill development in security and the use of hub and edge transport servers is included. *May lead to Microsoft Certification. Satisfactory/Unsatisfactory grading option*

*available. Prerequisites: CIS120 , CIS150, CIS152. Offered every Spring.*

## **CIS220 Security for Wireless Networks**

3 Credits (2 Lectures, 3 Labs)

Identify security risks, plan and design wireless security solutions based on security models (transitional, enterprise, personal) and security policies - acceptable use policy, password management policy, public access network use policy and virtual private network (VPN) policy. Discuss authentication, encryption, passive discovery, active attacks, monitoring and maintenance. *Supports preparation for Certification Wireless Service Providers (CWSP) certification. Satisfactory/Unsatisfactory grading option is available. Prerequisite: CIS153. Offered every Spring.*

## **CIS231 Introduction to Data Structures**

4 Credits (3 Lectures, 3 Labs)

Continuation of CIS123, Introduction to Programming. Topics include stacks and queues, recursion, lists, binary search trees, iteration over collections, hashing, searching, sorting algorithms, Big-O notation and standard collection classes. Also included is an overview of advanced topics. *May lead to Oracle Program Developer Certification. Satisfactory/Unsatisfactory grading option is available. Prerequisite: CIS123.*

## **CIS232 Advanced Web Development with Game Programming**

3 Credits (3 Lectures)

Opportunity to build on existing knowledge of HTML5 and JavaScript. Techniques used to build mobile games include use of JQuery, CSS3, SVG and Canvas. Topics include standard patterns for building games in HTML5, methodology, popular game engines and frameworks, building the Web application and publishing.

*Satisfactory/Unsatisfactory grading option is available. Prerequisites: CIS112, CIS123, CIS170.*

## **CIS233 Web Application Development Using PHP**

3 Credits (2 Lectures, 3 Labs)

A cutting edge Web development dedicated to covering the latest in emerging Internet and Web technologies. Design and maintain interactive and dynamic Web applications with the server-based scripting language PHP/MySQL. *Prerequisites: CIS112, CIS123.*

## **CIS235 Oracle Forms and Reports**

3 Credits (2 Lectures, 3 Labs)




The tools and utilities used for information gathering and management, including forms, reports, database mining, data warehousing, database performance monitoring and more. *Satisfactory/Unsatisfactory grading option is available. Prerequisite: CIS178.*

## **ECN200 Contemporary Economic Issues**

3 Credits (3 Lectures)   




Investigates the basic concepts and principles of economics, and how they operate within the American economic system. Highlights both Macroeconomics and Microeconomics in simplified terms; intended for those who will only take one course in economics. *Prerequisite: RDG100.*

## **ECN201 Principles of Macroeconomics**

3 Credits (3 Lectures) ECN 2201   

A descriptive analysis of the structure and functioning of the American economy. Emphasis on basic economic institutions and factors that determine general levels of output, employment, income and prices. *Prerequisite or corequisite: RDG100.*

## **ECN202 Principles of Microeconomics**

3 Credits (3 Lectures) ECN 2202   

A descriptive analysis of the theory of consumer choice, price determination, resource allocation and income distribution. Includes non-competitive market structures such as monopoly and oligopoly and the effects of government regulation. *Prerequisite or corequisite: RDG100.*

### **OAS101 Keyboard – Alphabetic**

*1 Credit (3 Labs)*

Mastery of essential microcomputer keyboard skills. Emphasis on alphabetic material using the touch technique.

*Recommended: Blackboard skills.*

### **OAS103 Keyboard – Speed/Accuracy**

*1 Credit (3 Labs)*

Improve keyboard speed and accuracy. Emphasis on alphabetic, numeric and symbol material using the touch technique. *Recommended: Blackboard skills*

### **OAS104 Ten-Key Pad**

*1 Credit (3 Labs)*

Key numeric data using touch technique on the computer numeric ten-key pad. *Recommended: Blackboard skills.*