

Business DIVISION



William R. Riter, M.S.
Division Chair

The division has a threefold purpose: first, to prepare students for entry-level positions in business; second, to prepare students to serve in administrative roles within Christian organizations; and finally, to prepare students for graduate study in business.

Degrees:

Bachelor of Arts

Majors:

Accounting
Business Administration
Business/Computer Information Systems
Business/International
Business/Management
Business/Marketing
Business/Sports Management

Minors:

Accounting
Business Administration
Computer Information Systems
International Business
Management
Marketing
Sports Management

Faculty

Riter, William R., Associate Professor of Business (1985) (Chair); B.S. (1964), Cedarville University; C.P.A. (1966), State of Illinois; M.S. (1971), University of Illinois

Berryman, W. Davis, (Dean); B.S. (1973), Washington University; M.S. (1977), Case Western Reserve University; M.B.A.(1983), Kent State University; Ph.D. (2002), Michigan State University

Bos, Lawrence J., Associate Professor of Business (1970); B.A. (1970), M.B.A. (1974), Michigan State University

Mbah, Chris H., Associate Professor of Business (1997); B.B.A. (1979), Sul'Ross State University; M.B.A. (1980), Sul'Ross State University

Stamm, K. Brad, Professor of Economics (1999); B.S. (1975), Bowling Green State University; M.B.A. (1987), Eastern College; Ph.D, (1997), Fordham University

Visser, Timothy J., Adjunct Professor of Law (1984); B.A. (1975), University of Michigan; J.D. (1977), University of Michigan

Warren, John D., Adjunct Professor of Management (1999); B.S.Ed. (1969), Central Michigan University; M.A. (1990), Western Michigan University

Young, Michael L., Assistant Professor of Business (1997); B.A.(1995), Cornerstone University; M.B.A. (1997), Grand Valley State University; D.B.A. (2001), University of Sarasota

Criteria for Graduation as a Division Major: See the **Academic Information** section under **Graduation Requirements** on page 54.

Degree information for the Bachelor of Arts degree along with major and minor listings by division can be found in the catalog section entitled **Degree Information**. (See page 69.)

Majors

General Education Core requirements for the Bachelor of Arts degree are listed in the **Degree Information** section. (See page 69.)

ACCOUNTING MAJOR (Bachelor of Arts)

Students selecting an Accounting major are not required to complete a minor.

150 Semester Hour Requirement for Michigan CPA - Many states now require 150 semester hours of education to become a Certified Public Accountant (CPA). The State of Michigan allows candidates for the CPA to take the exam after completing a bachelor’s degree with appropriate courses. The Cornerstone University B.A. degree with a major in Accounting will meet those requirements, although candidates will need to complete the 150 semester hours and experience requirements before being granted the CPA Certificate in Michigan. Most Cornerstone University graduates in Accounting will pursue a master’s degree in a related field to meet the 150-hour requirement. Some states require that the 150 hours be completed before taking the exam.

Required Courses Credit Hours

ACC 221	Accounting I . . . . .	.3
ACC 222	Accounting II . . . . .	.3
ACC 321	Intermediate Accounting I . . . . .	.3
ACC 322	Intermediate Accounting II . . . . .	.3
MGT 231	Principles of Management . . . . .	.3
MKT 251	Principles of Marketing . . . . .	.3
CSC 332	Systems Analysis . . . . .	.3
ECN 231	Macroeconomics . . . . .	.3
ECN 232	Microeconomics . . . . .	.3
BUS 211	Business Statistics . . . . .	.3
BUS 361	Business Law . . . . .	.3
BUS 341	Financial Management . . . . .	.3
ACC 325	Cost Accounting . . . . .	.3
ACC 327	Taxation . . . . .	.3
ACC 421	Advanced Accounting . . . . .	.3
ACC 423	Auditing . . . . .	.3
MGT 432	Strategic Management . . . . .	.3
BUS 380	Internship . . . . .	.3
<hr/>		
Total . . . . .		.54

BUSINESS ADMINISTRATION MAJOR (Bachelor of Arts)

Required Courses		Credit Hours
MGT 231	Principles of Management . . . . .	.3
MKT 251	Principles of Marketing . . . . .	.3
ECN 231	Macroeconomics . . . . .	.3
ECN 232	Microeconomics . . . . .	.3
ACC 221	Accounting I . . . . .	.3
ACC 222	Accounting II . . . . .	.3
BUS 211	Business Statistics . . . . .	.3
BUS 341	Financial Management . . . . .	.3
BUS 361	Business Law . . . . .	.3

BUS 380	Internship	.6
MGT432	Strategic Management	.3
Upper level elective in:		
	Accounting, Business, Economics, Management, Marketing, or Computer	.3
<hr/>		Total
		.39

BUSINESS MAJOR -

COMPUTER INFORMATION SYSTEMS EMPHASIS (Bachelor of Arts)

Students electing a Business major with a Computer Information Systems emphasis are not required to complete a minor.

Required Courses		Credit Hours
ACC 221	Accounting I	.3
ACC 222	Accounting II	.3
MGT 231	Principles of Management	.3
MKT 251	Principles of Marketing	.3
ECN 231	Macroeconomics	.3
ECN 232	Microeconomics	.3
BUS 211	Business Statistics	.3
BUS 361	Business Law	.3
BUS 341	Financial Management	.3
CSC 151	Hardware and Software Concepts	.3
CSC 121	Introduction to Programming	.4
CSC 221	Visual Basic	.3
CSC 325	Database Program Development	.3
CSC 332	Systems Analysis	.3
CSC 352	Data Communications	.3
MGT432	Strategic Management	.3
CSC 380	Internship	.3
One of the following:		.3
CSC 224	C++ Programming	
CSC 380	Internship	
CSC 431	Applied Software Project	
CSC 480	Advanced Topics	
<hr/>		Total
		.55

BUSINESS MAJOR - INTERNATIONAL BUSINESS EMPHASIS (Bachelor of Arts)

Students selecting a Business major with an International Business emphasis are not required to complete a minor.

Required Courses		Credit Hours
Foreign Language (200 level - chosen from same language area)		6
MGT 231	Principles of Management	.3
MKT 251	Principles of Marketing	.3
ACC 221	Accounting I	.3
ACC 222	Accounting II	.3

ECN 231	Macroeconomics	.3
ECN 232	Microeconomics	.3
BUS 211	Business Statistics	.3
BUS 317	International Business	.3
BUS 361	Business Law	.3
BUS 380	Internship	.3
BUS 411	Cross-cultural Business	.3
MGT 432	Strategic Management	.3
BUS 341	Financial Management	.3
MKT 359	International Marketing	.3
Two of the following:		.6
BUS 380	Internship (additional)	
MGT 339	International Management	
ECN 335	International Economics	
		<hr/>
Total		.54

BUSINESS MAJOR - MANAGEMENT EMPHASIS (Bachelor of Arts)

Students selecting a Business major with a Management emphasis are not required to complete a minor.

Required Courses	Credit Hours
MGT 231	Principles of Management3
MKT 251	Principles of Marketing3
ACC 221	Accounting I3
ACC 222	Accounting II3
ECN 231	Macroeconomics3
ECN 232	Microeconomics3
BUS 211	Business Statistics3
BUS 361	Business Law3
BUS 341	Financial Management3
MGT 332	Human Resources Management3
MGT 333	Production & Operations Management3
MGT 335	Administrative Behavior3
MGT 432	Strategic Management3
BUS 380	Internship6
Three of the following:	.9
ACC 325	Cost Accounting
BUS 317	International Business
BUS 337	Quantitative Methods/Quality Control
MGT 238	Principles of Leadership
MGT 334	Purchasing Procedures
MGT 337	Small Business Management
MGT 338	Advanced Leadership Studies
MGT 339	International Management
COM 234	Mass Media in Society
COM 321	Group Communication
KIN 215	Intro. to Sports Management
SOC 417	Minorities
SWK 444	Substance Abuse

Total54

BUSINESS MAJOR - MARKETING EMPHASIS (Bachelor of Arts)

Students selecting a Business major with a Marketing emphasis are not required to complete a minor.

Required Courses	Credit Hours
MGT 231	Principles of Management3
MKT 251	Principles of Marketing3
ACC 221	Accounting I3
ACC 222	Accounting II3
ECN 231	Macroeconomics3
ECN 231	Microeconomics3
BUS 211	Business Statistics3
BUS 361	Business Law3
BUS 341	Financial Management3
MKT 350	Marketing Management3
MKT 452	Marketing Problems/Strategy3
MGT 432	Strategic Management3
BUS 380	Internship6
Four of the following:12	

(at least two must be from marketing, MKT 3XX)

- ACC 323 Cost Accounting
- BUS 317 International Business
- MKT 352 Marketing Research
- MKT 353 Marketing Communications
- MKT 355 Retailing
- MKT 357 Consumer Behavior
- MKT 358 Sales Management
- MKT 359 International Marketing
- COM 234 Mass Media in Society
- COM 315 Philosophy and Theory of Communication
- COM 317 Media Literacy
- COM 321 Group Communication
- COM 322 Public Speaking
- COM 325 Rhetorical Theory and Criticism

BUSINESS MAJOR - SPORTS MANAGEMENT EMPHASIS (Bachelor of Arts)

General Education Core Exceptions

Required Courses	Credit Hours
BIO 241	Anatomy and Physiology I4
(Required for the major and meets the general education lab science requirement.)	

Students selecting a Business major with a Sports Management emphasis are not required to complete a minor.

Required Courses	Credit Hours
MGT 231	Principles of Management3

MKT 251	Principles of Marketing	.3
ACC 221	Accounting I	.3
ACC 222	Accounting II	.3
MKT 353	Marketing Communications	.3
ECN 231	Macroeconomics	.3
ECN 232	Microeconomics	.3
BUS 211	Business Statistics	.3
BUS 361	Business Law	.3
BUS 341	Financial Management	.3
MGT 432	Strategic Management	.3
BUS 380	Internship	.3
KIN 211	History and Principles of Physical Education	.3
KIN 215	Introduction to Sports Management	.3
KIN 422	Safety and the Law in Physical Education	.3
KIN 441	Organization and Administration	.3
Two of the following		.6
	BUS 317	International Business
	MGT 332	Human Resources Management
	MGT 335	Administrative Behavior
	MGT 238	Principles of Leadership
	MGT 337	Small Business Management
	MGT 338	Advanced Leadership Studies
	MGT 435	International Management
	MKT 350	Marketing Management
		<hr/>
		Total .54

Minors

ACCOUNTING MINOR

Required Courses		Credit Hours
ACC 321	Intermediate Accounting I	.3
ACC 322	Intermediate Accounting II	.3
ACC 325	Cost Accounting	.3
ACC 327	Taxation	.3
One of the following:		.3
	ACC 421	Advanced Accounting
	BUS 380	Internship
ACC 423	Auditing	.3
CSC 332	Systems Analysis	.3
		<hr/>
		Total .21

BUSINESS ADMINISTRATION MINOR

Required Courses	Credit Hours
ACC 221 Accounting I	3
ACC 222 Accounting II	3
One of the following:	3
ECN 231 Macroeconomics	
ECN 232 Microeconomics	
One of the following:	3
MGT 231 Principles of Management	
MKT 251 Principles of Marketing	
Upper level electives in Accounting, Business, Management, Marketing, Economics or Computer	6
<hr/>	
Total	18

COMPUTER INFORMATION SYSTEMS MINOR

Required Courses	Credit Hours
CSC 151 Hardware and Software Concepts	3
CSC 121 Introduction to Programming	4
CSC 221 Visual Basic	3
CSC 325 Database Program Development	3
CSC 332 Systems Analysis	3
Upper level electives in Computer Information Systems	6
<hr/>	
Total	22

INTERNATIONAL BUSINESS MINOR

Required Courses	Credit Hours
Foreign Language (200 level)	3
MGT 231 Principles of Management	3
MKT 251 Principles of Marketing	3
BUS 317 International Business	3
BUS 411 Cross-cultural Business	3
MGT 339 International Management	3
MKT 359 International Marketing	3
<hr/>	
Total	21

MANAGEMENT MINOR

Required Courses	Credit Hours
ACC 221 Accounting I	3
ACC 222 Accounting II	3
MGT 231 Principles of Management	3
MGT 335 Administrative Behavior	3
Three of the following:	9
ACC 325 Cost Accounting	
BUS 337 Quantitative Methods & Quality Control	
BUS 380 Internship (maximum of 3 credits)	
MGT 238 Principles of Leadership	
MGT 332 Human Resources Management	

MGT 333	Production & Operations Management
MGT 334	Purchasing Procedures
MGT 337	Small Business Management
MGT 338	Advanced Leadership Studies
MGT 339	International Management
KIN 215	Intro. to Sports Management
SOC 417	Minorities
SWK 444	Substance Abuse

Total21

MARKETING MINOR

Required Courses		Credit Hours
MKT 251	Principles of Marketing	3
MKT 350	Marketing Management	3
MKT 452	Marketing Problems/Strategy	3
Four of the following		12
BUS 317	International Business	
MKT 352	Marketing Research	
MKT 353	Marketing Communications	
MKT 355	Retailing	
MKT 357	Consumer Behavior	
MKT 358	Sales Management	
MKT 359	International Marketing	

Total21

SPORTS MANAGEMENT MINOR

Required Courses		Credit Hours
MKT 231	Principles of Management	3
MKT 251	Principles of Marketing	3
ECN 232	Microeconomics	3
KIN 211	History and Principles of Physical Education ...	3
KIN 215	Introduction to Sports Management	6
Two of the following		6
MGT 332	Human Resources Management	
MGT 238	Principles of Leadership	
MKT 353	Marketing Communications	
BUS 380	Internship (must be Sports Management related)	
KIN 422	Safety and the Law in Physical Education	
KIN 441	Organization and Administration	

Total21

Course Descriptions

Course Frequency Key

- 1 = Every Semester
- 2 = Alternate Semesters
- 3 = Every Third Semester
- 4 = Alternate Years
- 5 = Every Three Years
- 6 = As Needed

ACCOUNTING

- ACC 221 Accounting I** **3/2**
An introduction to the fundamental principles of financial accounting. Accounting cycle, asset valuation, short-term liabilities, payroll, income determination, and financial reporting are emphasized.
- ACC 222 Accounting II** **3/2**
A continuation of ACC 221 and managerial accounting topics. Long-term liabilities, owner's equity, cash flow and interpretation of financial statements. Cost accounting and managerial accounting and analysis will be introduced. Prerequisite: ACC 221
- ACC 321 Intermediate Accounting I** **3/2**
The practice and theory of accounting as applied to assets and liabilities. Emphasis on developing analytical abilities and applying accounting principles to a wide variety of business situations. Prerequisite: ACC 222
- ACC 322 Intermediate Accounting II** **3/2**
The practice and theory of accounting as applied to stockholders' equity, leases, pensions, revenue recognition, tax allocation, and financial reporting and analysis. Prerequisite: ACC 321
- ACC 325 Cost Accounting** **3/4**
Accounting functions in the manufacturing environment. Product costing, overhead cost analysis, standard costs, activity based costing, variance analysis, contribution accounting, flexible budgeting, and responsibility center accounting. Prerequisite: ACC 222
- ACC 327 Taxation** **3/4**
Federal income tax structure as related to individuals, partnerships, and corporations. Problems intended to provide an understanding of the theory, law, and regulations. Prerequisite: ACC 222
- ACC 421 Advanced Accounting** **3/4**
A study of specialized accounting topics. Emphasis is placed on accounting for business combinations. Additional topics include partnerships, governmental, nonprofit organizations, estates and trusts, and accounting procedures for insolvency. Prerequisite: ACC 321

ACC 423 Auditing 3/4
Functions of financial audits and auditors' reports, audit evidence and techniques, internal control review and evaluation, application to selected financial statement topics, applications of statistics, audit of EDP systems, auditors' ethical and legal responsibilities. Prerequisite: ACC 321, SSC 241

BUSINESS

BUS 211 Business Statistics 3/1
Descriptive statistics including measures of central tendency and standard deviation, time series analysis, statistical inference with emphasis upon testing of hypotheses and measures of association, and application of these techniques to decision-making and planning. Emphasis is placed on methods for defining, researching, analyzing, and evaluating problems found in business.

BUS 241 Personal Financial Planning 3/6
A study of the principles and practices of personal money management. Topics include: budgeting, taxes, banking, credit, investments, retirement, and estate planning. This course does not count toward any Business or Computer majors/minors.

BUS 280 Topics in Business 1-3/6

BUS 317 International Business 3/2
A study of international business systems within the context of the challenges of globalization. Emphasis is on fundamental economic theory and trade arguments, international monetary systems, international organizations, the role of trading blocs in regional integration, foreign direct investments, and international environmental forces, including ethical and legal considerations. Prerequisite: MKT 251 or 231

BUS 337 Quantitative Methods and Quality Control 3/6
Inspection techniques and statistical quality control as it applies to production processes and purchasing function. Prerequisite: SSC 241

BUS 341 Financial Management 3/2
Basic theoretical framework for decision-making in financial management. Role of the financial manager in capital budgeting, investing and financing activities. Prerequisites: ACC 222, SSC 241

BUS 361 Business Law 3/1
Survey of the law torts, contracts, and the doctrine of implied warranty.

BUS 380 Internship 1-6/1
Practical work experience in a business setting. Position must include decision-making responsibility in a management context. Opportunities to apply classroom knowledge to business world situations in areas of student's special interest. Prerequisite: Permission of instructor.

BUS 411	Cross-Culture Business	3/4
A discussion forum for analyzing, understanding and integrating the elements of cross-cultural environments in international business management. Focus is on cross-cultural challenges in globalization, global communications and differences, alliances, international negotiations and ethical considerations, relationships and synergy, and regional integration. Prerequisite: BUS 317		
BUS 470	Directed Readings	1-3/6
BUS 480	Advanced Topics	1-3/6
BUS 490	Independent Study	1-3/6

ECONOMICS

ECN 231 **Macroeconomics** **3/2**
 Emphasis upon macroeconomic theories, principles and theories of national income determination, consumption, investment, savings, business cycles, prices and money, the banking system, monetary and fiscal policy.

ECN 232 **Microeconomics** **3/2**
 Emphasis upon general microeconomic theory, an introduction to theories of consumer behavior, product demand, cost and supply, production, the firm and its markets, capital and pricing factors.

ECN 335 **International Economics** **3/4**
 A detailed study of international trade and finance with both macro and micro applications. Topics include balance of payments, foreign exchange markets, and the development of international economic institutions and the world economy.
 Prerequisites: Either ECN 231 or ECN 232.

ECN 460 **Entertainment Industries (MUS 460)** **3/6**
 Entertainment Industries is an overview of the business aspects of the entertainment industry using the principles of economics and business. The course will focus on supply, demand, and industry structure in the following areas: music, theater, and film. The course will use both micro and macro economics to analyze the business of the entertainment industry. The approach will require demographic and sociological analysis also. These cultural industries will also be looked at in terms of integration of faith and learning; that is, what is the Christian's role in and response to entertainment.

MANAGEMENT

MGT 231 **Principles of Management** **3/2**
 An introduction to the management function within an organization. Principles of planning, organization, directing, staffing, and controlling.

MGT 238 **Principles of Leadership** **3/2**
 Students will engage in a basic study of current theories of leadership. Through a variety of presentation methods, small group work, self-reflection, and peer review, students will observe and practice leadership principles, while identifying personal styles and preferences.

- MGT 332 Human Resources Management 3/2**
The objectives, functions, and organization of personnel programs; recruitment, selection, training, evaluation, development, and promotion; wage incentives, fringe benefits, OSHA, and the collective bargaining process. Prerequisite: MGT 231
- MGT 333 Production & Operations Management 3/4**
Theory, policy, procedures, and methods used in planning for and controlling the production of goods and services in business organizations. Application of sound management to manufacturing operations. Prerequisite: MGT 231.
- MGT 334 Purchasing Procedure 3/6**
The objectives and contribution of purchasing function and coordination of purchasing with other business functions. Description of materials, management, value analysis, and purchasing research. Source selection, evaluation, development, and negotiations are also discussed.
- MGT 335 Administrative Behavior 3/2**
Presents integrative theory of organization behavior. Human motivation as influenced by leadership, the organization itself, and social environment. Prerequisite: MGT 231
- MGT 337 Small Business Management 3/4**
Fundamental principles of management in a small business environment. Emphasis on the managerial considerations involved in establishing, planning, and financing a new business, as well as operating a going concern. Prerequisite: ACC 221, MGT 231, MKT 251.
- MGT 338 Advanced Leadership Studies 3/2**
This class will involved an in-depth study of leadership with an emphasis on the Biblical-servant model. Students will learn to apply this model in such areas as leadership ethics and appropriate uses of power. Prerequisite: MGT 238
- MGT 339 International Management 3/4**
A focus on management challenges associated with developing strategies and managing the operations of enterprises whose activities stretch across national boundaries. International firms will be examined with special emphasis on the management of resources and production. Prerequisite: MGT 231
- MGT 432 Strategic Management 3/2**
This course is the senior level capping course designed to integrate the knowledge and techniques studied in other courses such as accounting, economics, finance, management, marketing, and quantitative methods. It is also designed to provide experience in formulating organizational strategies and policies for meeting specified organizational strategic and operational goals. The case and business game approach is used. Prerequisite: Senior status

MARKETING

- MKT 251 Principles of Marketing 3/2**
An introduction to marketing centered on the areas of product, pricing, distribution, and promotion with specific application to market orientation and the marketing function.

- MKT 350 Marketing Management** 3/4
 A systematic assessment of the roles, responsibilities and tools of the marketing manager and how these are used to develop marketing plans and strategies. Application to current situations will be emphasized. Prerequisite: MKT 251, junior status
- MKT 352 Marketing Research** 3/2
 An analysis of research methodology and the skills needed to conduct market research and resolve marketing related problems. Emphasis will be placed on the mechanics of basic market research. Prerequisites: MKT 251
- MKT 353 Marketing Communications** 3/2
 An integrated study of the marketing functions of advertising, personal selling, sales promotions, publicity and public relations.
- MKT 355 Retailing** 3/4
 A study of topics related to retail businesses. Topics include management methods, location analysis, store organization, personnel planning, merchandising, buying and pricing techniques, identifying target markets, public relations, and cost management.
- MKT 357 Consumer Behavior** 3/4
 Develops awareness of various aspects of consumer motivation and behavior. Provides understanding of influences of business and environment and how each will affect consumer purchase decisions. Prerequisite: MKT 251
- MKT 358 Sales Management** 3/4
 Analyzes development and administration of the sales effort within the marketing organization. Included will be an assessment of the administrative functions required to manage the sales function as well as personal skills needed to function in a sales environment. Prerequisite: MKT 251
- MKT 359 International Marketing** 3/2
 A study of global markets within the context of general, regional and country-specific environmental forces, including managerial challenges of implementing international marketing strategies. Emphasis is on environmental analysis, international marketing strategies, and current international marketing issues, including the challenges of standardization, adaptation, marketing laws and ethical considerations and practices. Prerequisite: MKT 251.
- MKT 452 Marketing Problems/Strategy** 3/2
 An in-depth view of marketing strategies and how they are employed to identify and resolve today's marketing problems, including ethical considerations. Emphasis is on case analysis, concepts applications based on identifiable controllable and uncontrollable forces, the integration and synergy of marketing programs. Prerequisites: MGT 231, MKT 251, junior status
- COMPUTER INFORMATION SYSTEMS**
- CSC 112 Introduction to Spreadsheets** 1/1
 An understanding of spreadsheets and their use in financial applications.

- CSC 121 Introduction to Programming** 4/2
 This is the first course in programming. Topics include the design, coding, testing, and documentation of programs written in a modern high-level language. Fundamental issues of object-oriented programming, efficiency, and complexity are introduced in the context of programming and problem solving.
- CSC 151 Hardware and Software Concepts** 3/2
 A breadth-first introduction to Computer Science and Information Systems, emphasizing hardware, operating systems, and programming. Desktop computer hardware is described theoretically, with application to computer assembly, troubleshooting, and repair. Operating systems functions and components are studied, with application to system installation and maintenance. Network technologies are surveyed, and fundamental concepts of programming are introduced through HTML and scripting.
- CSC 211 Desktop Publishing** 3/2
 An introduction to desktop publishing software applied to the designing and producing of a variety of professional-quality documents (such as newsletters, brochures, forms, and presentations) that combine text and graphics features. Major topics will include composition, formatting, planning and layout, and selection and manipulation of graphics and type styles/sizes.
- CSC 221 Visual Basic** 3/2
 An introduction to programming using Visual Basic. This course introduces programming concepts specifically applied to the object-oriented environment of Windows. Prerequisite: Experience with Windows based applications.
- CSC 224 C++ Programming** 3/4
 An introduction to the C++ programming language. Students will gain programming skill through writing several programs in the C++ language. The course assumes previous programming experience preferably in an object-oriented language. Prerequisite: CSC 121 or substantial knowledge of some high-level programming language.
- CSC 231 Data Structures and Algorithms** 3/6
 A study of data structures such as stacks, lists, queues, trees, and graphs. Analysis of algorithms and complexity. Programming techniques and implementation of data structures and algorithms. Prerequisite: CSC 121 and MAT 131 or permission.
- CSC 280 Topics in Computing** 1-3/6
- CSC 325 Database Program Development** 3/4
 A study of the relational database model and the SQL programming language as applied to Business Information Systems. Prerequisite: CSC 332 and any programming course.
- CSC 331 Numerical Analysis** 3/6
 The numerical solution of nonlinear equations, ordinary differential equations, and systems of linear equations. Numerical approximation of functions, derivatives, and integrals. The analysis of errors. Introduction to writing efficient and reliable numerical software. Prerequisite: CSC 121 and MAT 132, and MAT 241 or permission

- CSC 451** **Theory of Operating Systems** **3/6**
An historical survey of the development of operating systems, followed by a discussion of fundamental concepts and terminology, together with practical applications to real systems. Topics are selected from basic concepts such as processes and inter-process communication, allocation of shared resources and memory, scheduling, deadlock, file systems, protection and security, with applications to system design and administration. Prerequisite: CSC 231.
- CSC 470** **Directed Readings** **1-3/6**
Typically, a student selection of readings in Computer related topics. Consultation with Business/Computer faculty and a complete application form is required. Prerequisites: See General Requirements.
- CSC 480** **Advanced Topics** **1-3/6**
Topics of current interest are offered to introduce new course material and to enhance the Business/Computer majors. Prerequisites: To be determined when scheduled.
- CSC 490** **Independent Study** **1-3/6**
The study of Computer related topics chosen by the student in consultation with Business/Computer faculty. A complete application form is required. Prerequisites: See General Requirements.

