

# UNDERGRADUATE COURSE DESCRIPTIONS



## Course Prefix Abbreviation

ACCT	Accounting	MGMT	Management
CADE	Career Development	MKTG	Marketing
CMSC	Computer Science	QANT	Quantitative Studies
DATA	Data: Theory & Applications	RESH	Research
ECON	Economics	SOSC	Social Science
ENGL	English	SCIN	Science
FINS	Finance	TECH	Technology
INST	Information Systems	CAPS	Capstone
MATH	Mathematics	WITE	Wireless Technology

All course codes are preceded by four-character abbreviations that are used to represent the area of study. These areas of study abbreviations are followed by three numbers that are used to qualify the level of study. All UoNA Undergraduate courses are within the range of 100 – 499.

## Prerequisites

Prerequisites denote the courses that must have been completed in prior quarters before taking certain courses. No prerequisite course is required unless it is specified in the individual course description below.

## General Education Courses

### **ENGL 101 Oral Communications 4.5 credit hours**

In this course, students will develop their conversation, presentation, and public speaking skills. They will review appropriate words and phrases for use in everyday conversations and formal, presentations, along with many opportunities to speak with or in front of others. Applications include exercises to increase students' abilities to confidently and accurately discuss and share information on a wide range of topics.

### **ENGL102 English Composition 4.5 credit hours**

In this course, students will develop their writing ability. Although expressing ideas in writing is the focus of the course, an integrated approach of listening, speaking, reading, and writing is used to enhance language usage. Students will practice academic writing, and use the language via face-to-face interaction and networked multimedia. Students will gain competency in the use of language, structure of texts, ideas that shape different cultures, and interrelationships between ideas and languages.

### **ENGL 103 Advanced Writing 4.5 credit hours**

*Prerequisite: ENGL 102 English Composition.* In this course, students will investigate and apply key elements of academic and formal writing. Students will consider writing processes; from assessing sources, developing ideas, organizing paragraphs, to proofreading. Students will also apply the elements of formal writing by practicing language skills and developing vocabulary. Through the investigation and development of professional letters, case studies, reports, and essays; students will incorporate research, and demonstrate more in-depth writing skills.

**MATH 101 College Algebra****4.5 credit hours**

Students in this course will be introduced to quadratics, polynomials; rational, exponential, and logarithmic functions; and systems of equations. Topics will include matrices, inequalities, systems of linear equations and determinants, sequences, permutations, combinations, and binomial theorems. Students will apply these mathematical theories to solve a range of problems. Occupational Associate's Degree program students are required to take MATL 101, which is a 1-credit lab course that supports the 4.5-credit didactic course.

**MATL 101 College Algebra****1.0 credit hours**

*Co-requisite (Concurrent): MATH 101.* Students in this course will be introduced to quadratics, polynomials; rational, exponential, and logarithmic functions; and systems of equations. Topics will include matrices, inequalities, systems of linear equations and determinants, sequences, permutations, combinations, and binomial theorems. Occupational Associate's Degree program students are required to take MATL 101, which is a 1-credit lab course that supports the 4.5-credit didactic course MATH 101.

**MATH 102 Calculus****4.5 credit hours**

*Prerequisite: MATH 101 College Algebra.* Students participating in this course will examine various calculus concepts and the application of these mathematical functions to solve complex problems. There is a general emphasis on solving challenging problems using mathematical modeling with specific attention focused on: limits and continuous functions, techniques of derivatives, and integration and its applications.

**QANT 301 Statistics****4.5 credit hours**

*Prerequisite: MATH 101 College Algebra.*

In this course, students will be introduced to the concepts of modern statistical methods and their applications. Topics to be covered include data collection techniques, graphical and numerical summaries of data, probability and probability distributions, normal distributions, inference for a single mean, a single proportion, difference in means using confidence intervals and hypothesis testing, simple linear regression and correlation, association between categorical variables, and decision trees. Students will utilize Microsoft Excel during the course to advance their competencies.

**SCIN 201 Future Studies****4.5 credit hours**

Students will explore the future of the planet framed by the perspective of the United States and its interaction with other nations and regions of the world. Through the processes of examination and scenario building, students will enhance their understanding about what the world may be like in both the near and distant future. Contemporary futurist readings, class discussions, comparative analyses, and essays will be employed to help students reach a deeper understanding of the future of the US and its role as a member of a sustainable planet.

**SOSC 101 Sociology****4.5 credit hours**

Students will examine the nature of sociology; methods of sociological research; pioneer and contemporary sociologists; culture; socialization, social interaction, and social structure, and groups and organizations. Topics to be explored in the course include deviance and social control, stratification and social inequality, social institutions, populations, urban life, collective behaviors, social movements, and social change and technology. Applying sociological theories to the development of societies is emphasized.

**SOSC 102 Psychology****4.5 credit hours**

In this course, students will be introduced to scientific methods used for understanding human behavior and the mind. Course topics include contemporary psychological research findings that are focused on the biological foundation of human behavior, learning principles, critical cognitive abilities, and the processes of sensation, memory, language, and reasoning. Important concepts of social behavior and cognition, social development, personality, and psychological disorders will also be reviewed.

**SOSC 103 Political Science****4.5 credit hours**

Students will be introduced to the field of political science. Students will survey the main approaches used for studying politics, summarize major political theories and concepts, as well as explore the development of both liberal democracies and human rights. They will be introduced to basic concepts of sovereignty, population, and territory, as well as rights of liberty, equality, and participation. The U.S. Congress, the nation's voting system, and key elements of political institutions such as parties, pressure groups, constitutions, systems of representation, and government institutions and their functions will be reviewed.

**SOSC 201 Law and Ethics \*\*****4.5 credit hours**

Students in this course will be introduced to US laws and global ethical standards that impact society. They will consider the influence of ethical decision-making and the foundation of today's US legal environment. International concepts will be introduced to enhance students' skills utilizing ethical thinking and problem-solving exercises.

**SOSC 202 American Cultural Studies****4.5 credit hours**

In this course, students will explore the concept of American culture and examine the different cultural groups which constitute American society. Through readings and discussions, numerous cultural groups will be investigated, with their respective socio-historical developments and diverse impacts on American culture. Historical and contemporary readings will form the bases for critical discussions, comparative analyses, and formal essays that will aid students in reaching a deeper understanding of American culture and what it means to be American.

**SOSC 203 World History – Ancient to 1750****4.5 credit hours**

In this course, students will survey world history from prehistory to 1750, including the development of ancient societies in Asia, Europe, Africa, and the Americas. The following themes will be explored throughout the course that encourage the identification broad patterns found within societies: change and continuity; impacts of interaction, technology, economics, and demography; social structure and gender roles; cultural, religious, and intellectual development; and changes in functions and structures of states in attitudes toward states and political identities, including the emergence of the nation state.

**SOSC 204 World History – 1750 to Present****4.5 credit hours**

In this course, students will survey world history from 1750 to the present, which includes developments throughout Asia, Europe, Africa, and the Americas. The following themes will be explored throughout the course that encourage the identification of broad patterns found within societies: change and continuity; impacts of interaction, technology, economics, and global warfare; social structure and gender roles; cultural, religious, and political differences; and changes in functions and structures of states and nations as societies move toward a more globalized world.



**CMSC 201 Design and Analysis of Algorithms****4.5 credit hours**

*Prerequisite: MATH 201 Discrete Mathematics.* Students in this course will be introduced to important data structures and fundamental principles of algorithm design in computer science that are used to efficiently solve computing problems. Topics explored include analysis of algorithm efficiency, plus hash, heap, graph, tree, sorting and searching, brute force, decrease-and-conquer, and transform-and-conquer. Dynamic programming, greedy programming, and the divide-and-conquer design paradigm, with applications to fast sorting, searching, and multiplication will also be integrated into course material.

**CMSC 301 Introduction to Programming Logics****4.5 credit hours**

Students taking this course will gain an understanding of programming concepts and logic. Previous programming experience is not required. Contemporary programming models and the logical thought processes used in programming will be introduced to students with examples but without language syntax in order to familiarize them with this subject. Flowcharts and pseudocodes will additionally be used to demonstrate program logic designs.

**CMSC 302 Operating Systems****4.5 credit hours**

In this course, students will examine the key structures and mechanisms of operating systems. Topics covered, and applications and exercises, will include CPU scheduling, multi-threads, concurrent processes, memory management, file systems, storage subsystems, and input/output management. Students will explore the latest operating systems technologies and developments, and future implications. If Occupational Associate's Degree program students elect to take CMSC 302, they are required to take CMSL 302, which is a 1-credit lab course that supports the 4.5-credit didactic course.

**CMSL 302 Operating Systems****1.0 credit hours**

*Co-requisite (Concurrent): CMSC 302.* In this course, students will examine the key structures and mechanisms of operating systems. Topics covered, and applications and exercises, will include CPU scheduling, multi-threads, concurrent processes, memory management, file systems, storage subsystems, and input/output management. Students will explore the latest operating systems technologies and developments, and future implications. Occupational Associate's Degree program students are required to take CMSL 302, which is a 1-credit lab course that supports the 4.5-credit didactic course CMSL302.

**CMSC 303 JAVA Programming****4.5 credit hours**

*Prerequisite: CMSC 301 Introduction to Programming Logics.* In this course, students will acquire the Java programming language with a fundamentals-first approach, as well as conduct hands-on projects utilizing the UoNA Virtual Lab. Topics include basic JAVA programming concepts, building elements and techniques including selection, looping, method definitions, strings, step-wise refinement, and arrays. In addition to the essential concepts, students will further explore object-oriented programming using common tools. Students will create simple programs in JAVA, and read and edit source code within an integrated development environment (IDE).

**CMSC 304 Software Engineering****4.5 credit hours**

In this course, students will gain an essential understanding of what software engineering involves, including the processes and techniques fundamental to the development of reliable software systems. Agile methods will be discussed, along with the topics of software reuse and traditional plan-driven software engineering. Students will be introduced to design issues such as error handling, performance, and inter-process communication.

**ECON 201 Principles of Economics****4.5 credit hours**

Students participating in this finance-oriented course will gain foundational knowledge about basic economics as it applies to themselves, institutions, business firms and societies at large. Student consideration of solutions to economic challenges in the 21<sup>st</sup> Century is emphasized. The phenomena of how consumer choice, enterprises, and the government frequently interact with each other within commodity and factor markets is reviewed. Students will be introduced to methods that incorporate economic analyses to gain a better understanding of key topics such as technology, education, environmental pollution, property, income and wealth distribution, and financialization of the world economy.

**ECON 301 Introduction to Managerial Economics****4.5 credit hours**

*Prerequisite: ECON 201 Principles of Economics.* Students in this course will explore how the profitability of companies can be increased through the application of economic analysis to a wide array of business problems. Emphasis will be placed on practically applying various economic tools to real-world issues rather than relying only on purely theoretical understandings of managerial economics.

**MGMT 110 Business Communications****4.5 credit hours**

In this course, students will develop essential business communication skills needed to function and succeed in business and workplace settings, while at the same time increasing their knowledge about major business management areas. Marketing and human resource management (HRM) will be focused on by utilizing industry studies on these topics. Class activities will include discussions, vocabulary previews, applied exercises, and task-based assignments. If Occupational Associate's Degree and Diploma program students elect to take MGMT 110, they are required to take MGML 110, which is a 1-credit lab course that supports the 4.5-credit didactic course.

**MGML 110 Business Communications****1.0 credit hours**

Co-requisite (Concurrent): MGMT 110. In this course, students will develop essential business communication skills needed to function and succeed in business and workplace settings, while at the same time increasing their knowledge about major business management areas. Marketing and human resource management (HRM) will be focused on by utilizing industry studies on these topics. Class activities will include discussions, vocabulary previews, applied exercises, and task-based assignments. Occupational Associate's Degree and Diploma program students are required to take MGML 110, which is a 1-credit lab course that supports the 4.5-credit didactic course MGMT 110.

**INST 201 Introduction to Information Systems \*\*****4.5 credit hours**

Students will explore information systems and concepts related to the development of information systems, information technology, and application software. They will be introduced to ways in which information is used in organizations, along with the effect IT has on an organization's structure, processes, employees, customers, and suppliers. The structure and functions of computers and telecommunications systems, plus how IT enables improvement in quality, timeliness, and competitive advantage will also be examined.

**INST 202 Data Communications and Networking****4.5 credit hours**

This course concentrates on introducing students to primary aspects of data communications networking and includes exploration of Open Systems Interconnection (OSI) and Internet models. Course topics and applied exercises are focused on basic computer networking, data communications / transmission/encoding/link control, communications network techniques, network protocols, wireless networking, network server configuration, and planning and deploying local area networks. If Occupational Associate's Degree and Diploma program students elect to take INST 202, they are required to take INSL 202, which is a 1.5-credit lab course that supports the 4.5-credit didactic course.

**INSL 202      Data Communications and Networking      1.5 credit hours**

Co-requisite (Concurrent): INSL 201. This course concentrates on introducing students to primary aspects of data communications networking and includes exploration of Open Systems Interconnection (OSI) and Internet models. Course topics and applied exercises are focused on basic computer networking, data communications / transmission/encoding/link control, communications network techniques, network protocols, wireless networking, network server configuration, and planning and deploying local area networks. Occupational Associate's Degree and Diploma program students are required to take INSL 202, which is a 1.5-credit lab course that supports the 4.5-credit didactic course INST 202.

**INST 301      Computer Hardware and Software      4.5 credit hours**

Students will acquire and practice key skills in computer hardware and software management. Topics include the design of computing systems, computer hardware and software components, and telecommunications. Through a combination of lecture and applications, students will explore specific PC components and the setup of basic PC workstations; conduct basic software installations; identify compatibility issues; recognize/prevent basic security risks. Preventative maintenance of computers along with the concept of Green IT will be reviewed. If Occupational Associate's Degree program students elect to take INST 301, they are required to take INSL 301, which is a 1.0-credit lab course that supports the 4.5-credit didactic course.

**INSL 301      Computer Hardware and Software      1.0 credit hours**

Co-requisite (Concurrent): INST 301. Students will acquire and practice key skills in computer hardware and software management. Topics include the design of computing systems, computer hardware and software components, and telecommunications. Through a combination of lecture and applications, students will explore specific PC components and the setup of basic PC workstations; conduct basic software installations; identify compatibility issues; recognize/prevent basic security risks. Preventative maintenance of computers along with the concept of Green IT will be reviewed. Occupational Associate's Degree program students are required to take INSL 301, which is a 1.0-credit lab course that supports the 4.5-credit didactic course INST 301.

**INST 302      Computer Server Environment      4.5 credit hours**

*Prerequisite: INST 202 Data Communications and Networking.* In this course, students will engage in the installation and administration of a Windows/Linux Server network operating system. Topics covered include managing and maintaining physical and logical devices, access to resources, the server environment, managing users, computers and groups, and managing/implementing disaster recovery. Students will apply the information acquired to the successful management and maintenance of a Windows/Linux Server environment.

**INST 401      Business Intelligence      4.5 credit hours**

*Prerequisite: INST 201 Introduction to Information Systems or INST 202 Data Communications and Networking.* Students in this business-oriented course will investigate core concepts, technologies, and techniques generally referred to as 'data analytics' but also known by other names, including Business Intelligence (BI). Topics to be covered include the impact of big data analytics on businesses and relevant decision-making models. Students will examine how organizations have employed analytics to make decisions or to gain a competitive edge, and the future implications of BI.

**MATH 201 Discrete Mathematics \*\*****4.5 credit hours**

In this course, students will be introduced to discrete mathematical objects and an overview of abstraction, notation and critical thinking directly related to computer science and engineering. Topics include logic, relations, functions, basic set theory, countability and counting arguments, proof techniques, mathematical induction, graph theory, combinatorics, discrete probability, recursion, recurrence relations, and elementary number theory, and their applications relative to computer science.

**MGMT 150 Field Operations Management \*\*****4.5 credit hours**

In this course, students will be presented with the expectations and responsibilities of a field operations manager. The role of an operations manager who oversees all aspects of the business at the job site will be examined, including scheduling, work flow, productivity, and inventory and equipment control. Students will engage in applications of quality management, supply-chain management, and traditional and transformational management approaches from the perspective of an on-site manager. Software applications to advance efficiency will be introduced and used to reinforce student competencies. Occupational Associate's Degree and Diploma program students are required to take MGML 150, which is a 1.5-credit lab course that supports the 4.5-credit didactic course.

**MGML 150 Field Operations Management \*\*****1.5 credit hours**

*Co-requisite (Concurrent): MGMT 150.* In this course, students will be presented with the expectations and responsibilities of a field operations manager. The role of an operations manager who oversees all aspects of the business at the job site will be examined, including scheduling, work flow, productivity, and inventory and equipment control. Students will engage in applications of quality management, supply-chain management, and traditional and transformational management approaches from the perspective of an on-site manager. Software applications to advance efficiency will be introduced and used to reinforce student competencies. Occupational Associate's Degree and Diploma program students are required to take MGML 150, which is a 1.5-credit lab course that supports the 4.5-credit didactic course MGMT 150.

**MGMT 201 Principles of Management \*\*****4.5 credit hours**

Students will be introduced to the major functions of management (planning, organizing, leading, and controlling), and the significance each function plays in the continued existence and operations of companies. Topics include how companies use management to set and accomplish goals through individuals, groups, efficient use of resources and communications; and the influence of ethics. Other topics to be covered include decision making, change, employee development, organizational structures, management control, leadership, conflict resolution, information security, and globalization.

**MGMT 202 Introduction to Business****4.5 credit hours**

This course introduces students to the many facets of the private enterprise system and the businesses that operate within that framework. Business systems, workforce demographics, social responsibility, business ethics, organizations, entrepreneurship, small businesses, and franchise systems will be examined. Students will further explore management processes, human resource management, marketing management, business finance, and business decision-making. Quantitative tools used in international business, MIS, and the future dimensions of business opportunities in a global economy will be discussed.



**MGMT 203 Principles of Project Management\*\*****4.5 credit hours**

In this course, students will be introduced to project management from a manager's perspective, including organization, planning, implementation, and control tasks to achieve an organization's objectives. Tools and concepts such as a project charter, scope statement, work breakdown structure, project estimating, and scheduling methods are reviewed. Discussions include key phases of the project lifecycle, including initiating a project, developing project plans, executing and managing a project, and closing out a project. Students will review how to identify and address change management and political issues associated with project management.

**MGMT 204 Human Resources Management \*\*****4.5 credit hours**

Students will be introduced to the functions of personnel/human resource management within a range of organizations and work environments. Topics covered will include equal opportunity and the legal environment, recruitment and selection, performance appraisal, employee development, compensation planning, and employee relations. Students will also investigate how organizations can acquire, reward, motivate, use, and generally manage human resources effectively.

**MGMT 225 Supervision of Field Technicians \*\*****4.5 credit hours**

*Prerequisite: MGMT 201 Principles of Management.* In this course, students will consider the management attributes critical for supervising field technicians with an emphasis on skilled trades professionals, workers who perform labor tasks on job sites that require specific training. The responsibilities of a front- or direct-line manager are examined. Hands-on applications include job site orientation and training, coaching, motivation, assigning jobs, and performance assessment. Dealing with labor/management issues are introduced. Students work through simulations that prepare them to transition from a field technician to a supervisory role. Occupational Associate's Degree and Diploma program students are required to take MGML 225, which is a 1-credit lab course that supports the 4.5-credit didactic course.

**MGML 225 Supervision of Field Technicians \*\*****1.0 credit hours**

*Co-requisite (Concurrent): MGMT 225.* In this course, students will consider the management attributes critical for supervising field technicians with an emphasis on skilled trades professionals, workers who perform labor tasks on job sites that require specific training. The responsibilities of a front- or direct-line manager are examined. Hands-on applications include job site orientation and training, coaching, motivation, assigning jobs, and performance assessment. Dealing with labor/management issues are introduced. Students work through simulations that prepare them to transition from a field technician to a supervisory role. Occupational Associate's Degree and Diploma program students are required to take MGML 225, which is a 1-credit lab course that supports the 4.5-credit didactic course MGMT 225.

**MGMT 302 Principles of Marketing****4.5 credit hours**

In this course, students will examine essential concepts and specialized terminology related to marketing within business environments. A range of domestic and international environments that impact marketing will be examined, with particular emphasis and applications placed on marketing environments, segmentation, positioning and targeting. If Occupational Associate's Degree program students elect to take MGMT 302, they are required to take MGTL 302, which is a 1-credit lab course that supports the 4.5-credit didactic course.

**MGML 302 Principles of Marketing****1.0 credit hours**

*Co-requisite (Concurrent):* MGMT 302. In this course, students will examine essential concepts and specialized terminology related to marketing within business environments. A range of domestic and international environments that impact marketing will be examined, with particular emphasis and applications placed on marketing environments, segmentation, positioning and targeting. Occupational Associate's Degree program students are required to take MGML 302, which is a 1-credit lab course that supports the 4.5-credit didactic course MGMT 302.

**MGMT 303 Business Finance****4.5 credit hours**

*Prerequisite:* MGMT 202 *Introduction to Business*. In this course, students will gain a fundamental understanding of business finance. The course is corporate-oriented and emphasizes practical applications and problem-solving techniques in order to provide students with the tools they need to understand and solve the basic financial problems confronting the business world today. The topics covered include the time value of money, valuation of assets, capital budgeting techniques, capital-structure theory and dividend policy assessment. The application of these subjects to international markets will be made whenever possible.

**MGMT 306 Small Business Management****4.5 credit hours**

In this course, students will engage in exercises to gain insight into the multi-faceted nature of managing a small business. Topics to be covered will include managing employees, inventory management, accounting and financial concerns, merchandising, sales, planning and scheduling, basic legal issues, customer relations, and strategic partnerships/alliances. If Occupational Associate's Degree program students elect to take MGMT 306, they are required to take MGTL 306, which is a 1.5-credit lab course that supports the 4.5-credit didactic course.

**MGML 306 Small Business Management****1.5 credit hours**

*Co-requisite (Concurrent):* MGMT 306. In this course, students will engage in exercises to gain insight into the multi-faceted nature of managing a small business. Topics to be covered will include managing employees, inventory management, accounting and financial concerns, merchandising, sales, planning and scheduling, basic legal issues, customer relations, and strategic partnerships/alliances. Occupational Associate's Degree program students are required to take MGML 306, which is a 1.5-credit lab course that supports the 4.5-credit didactic course MGMT 306.

**MGMT 304 Leadership Theories and Practice \*\*****4.5 credit hours**

*Prerequisite:* MGMT 201 *Principles of Management*. Students will engage in exercises focused on an overview of the theoretical framework for the practice of leadership in organizations. Assignments will include how to apply theory and best practices to develop effective leadership. Emphasis will be placed on specific leadership styles, including strategic leadership, systems thinking, team leadership, change management, and developing personnel.

**MGMT 401 Organizational Behavior \*\*****4.5 credit hours**

*Prerequisite:* MGMT 201 *Principles of Management* or MGMT 202 *Introduction to Business*. Students in this management course will investigate the key theories in the field of organizational behavior (OB) in order to acquire an understanding of how people and groups in organizations behave, react, and interpret events. Students will engage in activities focused on the role of organizational systems, structures, and processes in shaping behavior, as well as how organizations really function and strategies that create organizational effectiveness.

**MGMT 402 Business Law and Ethics****4.5 credit hours***Prerequisite: MGMT 201 Principles of Management OR MGMT 202 Introduction to Business*

In this course, students will be introduced to basic jurisprudential discussions and debates that relate to business in society. Topics will include a general overview of the nature of law and its relationship to ethics; theories of contract, torts, and property; criminal law as it applies to business situations; and theories of the business enterprise and its regulation. The main focus will be on the organization and operation of the American legal system, legal rules, and ethical constraints that impact business, and the practical application of these rules and constraints to real-world situations.

**RESH 401 Research Methods****4.5 credit hours***Prerequisites: ENGL102 or MGMT 110 (or ENGL 201 prior to SUM 2022)*

In this course, students will be introduced to applied research methods which provide the foundation for research projects or papers. This course covers the fundamentals of statements of purpose, research proposals and methods, and selection of appropriate academic and industry sources. The methods and skills needed to develop and complete an applied research project or paper, and how research can be utilized to support management decisions and applied in professional contexts, are emphasized.

**TECH 101 Introduction to Computers****4.5 credit hours**

Students will be introduced to the fundamentals of how a computer works. Topics to be covered include the basic steps in building a modern computer utilizing fundamental design principles, as well as the essentials of device switching, computer logic (combinational and sequential), and computer architecture. The necessary functions and dynamics of machine language, assembly language, virtual machines, compilers, and high-level languages and operating systems are also presented and discussed in the course.

**TECH 203 Network Management and Infrastructure****4.5 credit hours**

In this course, students will be introduced to today's networks and IT infrastructure components and how they are similar to nerves, enabling information to flow both within and outside organizations. Additional discussion about how progressive enterprises have always faced challenges when trying to manage and design IT infrastructure which will appropriately meet their respective business needs will be reviewed.

**TECH 301 Technology Management \*\*****4.5 credit hours**

In this course, students will examine the steps necessary to successfully analyze information technology problems by identifying and defining computing requirements leading to appropriate solutions. Emphasis will be placed on how to design, implement, and evaluate a computer-based system, process, component, or program to meet desired outcomes. Exercises focus on developing the ability to analyze the local and global impact of technologies on individuals, organizations, and societies. Occupational Associate's Degree program students are required to take TECL 301, which is a 1-credit lab course that supports the 4.5-credit didactic course.

**TECL 301 Technology Management****1.0 credit hours**

*Co-requisite (Concurrent): TECH 301.* In this course, students will examine the steps necessary to successfully analyze information technology problems by identifying and defining computing requirements leading to appropriate solutions. Emphasis will be placed on how to design, implement, and evaluate a computer-based system, process, component, or program to meet desired outcomes. Exercises focus on developing the ability to analyze the local and global impact of technologies on individuals, organizations, and societies. Occupational Associate's Degree program students are required to take TECL 301, which is a 1-credit lab course that supports the 4.5-credit didactic course.

## Undergraduate Electives

Bachelor's program students may take electives designated from 100- to 499-levels. Occupational Associate Degree program students may take electives designated from 100- to 405-levels. Diploma program students may take electives designated from 100- to 299-levels. Diploma program student may submit a request to the VP or Director of Education to receive approval to take a higher-level elective.

Designated program core courses may be taken as electives in other undergraduate programs.

Undergraduate general education courses cannot be applied as "electives". Students may not take additional general education courses or request transferring general education courses from other institutions to fulfill the elective requirements for the bachelor's or occupational associate's degree or diploma programs.

### **ACCT 303 Taxation**

**4.5 credit hours**

*Prerequisite: ACCT 302 Principles of Accounting II.* In this course, students will be introduced to taxation with emphasis on the five sections of the Income Tax Act and how these laws and regulations apply in the preparation of personal and business tax returns. This course provides an over view of federal income taxes for individuals, partnerships, and corporations. Topics include tax law, electronic research and methodologies and the use of technology for the preparation of individual and business tax returns.

### **ACCT 401 Financial Accounting**

**4.5 credit hours**

*Prerequisite: ACCT 302 Principles of Accounting II.* In this course, students will gain an understanding of the principles and analytical techniques that relate to corporate financial management. Students will review, interpret, develop, and apply accounting information used in effective managerial decision making. In addition, students will be exposed to reporting and analysis requirements associated with inventory, fraud, internal control and cash, receivables, long-lived assets and liabilities.

### **CADE 101 Career Development**

**0.5 credit hours**

In this course, students will consider career development opportunities, including professional networking, internships, social media, and visits to potential employers. Exercises will include completing employment applications, creating resumes and cover letters, and interviewing techniques. The career development cycle from education to gaining employment in a specific industry or business will be examined.

### **CMSC 401 Database Management Systems**

**4.5 credit hours**

Students participating in this upper-division course will gain an understanding of data structures, file organizations, concepts and principles of database management systems (DBMS), data analysis/modeling, as well as database design/management/implementation. Students will be introduced to hierarchical, network and relational data models; entity-relationship modeling; the Structured Query Language (SQL); data normalization; and database design. Using Microsoft's SQL Server DBMSs, students will gain hands-on experience in database design and implementation. Advanced database concepts, including web-based database applications will be introduced.

### **CMSC 402 Web Design and Development**

**4.5 credit hours**

Students will use computers to creatively design web pages using HTML and CSS during this course. Through real-world, hands-on experiences they will also acquire the ability to develop programs and algorithms, use Java-script and provide business solutions. Web design standards, Search Engine Optimization, and image manipulation will be presented as well.

**CMSC 403 Mobile Technology****4.5 credit hours**

Students in this upper-division course will be exposed to one of the newest and fastest developing fields in the discipline: mobile and wireless computing technologies. The topics and trends that will be covered include: basic mobile and wireless computing principles and technologies, components, architecture and infrastructure of systems and services to support mobile platforms, overview of different wireless communication networks such as CDMA (Code Division Multiple Access), WCDMA (Wideband CDMA), HSPA (High Speed Packet Access) and LTE (Long Term Evolution). A brief introduction to mobile platforms like Android, iOS, and smart devices will be reviewed.

**ECON 302 Global Economy****4.5 credit hours**

*Prerequisite: ECON 201 Principles of Economics.* In this course, students will reflect on the challenges international businesses and entrepreneurs are facing in today's globalized world as well as potential solutions. Using an interdisciplinary approach, this class will explain to students how globalization intersects with other areas such as economic development, political science, the environment and gender issues.

**MGMT 215 Construction Project Management****5.5 credit hours**

*Prerequisite: MGMT 201 Principles of Management.* In this course, students will consider the coordination of all resources throughout the life of a construction project to achieve predetermined objectives, including cost, time, quality, and stakeholder satisfaction. Construction projects for a range of field applications with specific objectives and constraints will be examined. Students will engage in exercises with increasing depth and scope for the life cycle of construction projects—initiation, planning, implementation, monitoring, and completion. Software applications will be introduced and applications utilized to increase student competencies. If Occupational Associate's Degree and Diploma program students elect to take MGMT 215, they are required to take MGML 215, which is a 1-credit lab course that supports the 4.5-credit didactic course.

**MGML 215 Construction Project Management****1.0 credit hours**

*Co-requisite (Concurrent): MGMT 215.* In this course, students will consider the coordination of all resources throughout the life of a construction project to achieve predetermined objectives, including cost, time, quality, and stakeholder satisfaction. Construction projects for a range of field applications with specific objectives and constraints will be examined. Students will engage in exercises with increasing depth and scope for the life cycle of construction projects—initiation, planning, implementation, monitoring, and completion. Software applications will be introduced and applications utilized to increase student competencies. Occupational Associate's Degree and Diploma program students are required to take MGML 215, which is a 1-credit lab course that supports the 4.5-credit didactic course MGMT 215.

**WITE 101 Wireless Infrastructure Technology I****4.5 credit hours**

In this course, students will be introduced to telecommunications with a focus on wireless infrastructure technology. Safety regulations for the technician and work site, including OSHA telecom safety, work site hazards, CPR, and first aid will be reviewed. Essential electrical concepts will be presented. Students will apply these technical, energy, and power concepts through hands-on structured wiring, radio frequency, and other lab exercises. WITE 101 prepares students with the foundation to pursue guided field experiences, and industry-provided externships and certification options. If Occupational Associate's Degree and Diploma program students elect to take WITE 101, they are required to take WITL 101, which is a 1.5-credit lab course that supports the 4.5-credit didactic course.

**WITL 101      Wireless Infrastructure Technology I      1.5 credit hours**

In this course, students will be introduced to telecommunications with a focus on wireless infrastructure technology. Safety regulations for the technician and work site, including OSHA telecom safety, work site hazards, CPR, and first aid will be reviewed. Essential electrical concepts will be presented. Students will apply these technical, energy, and power concepts through hands-on structured wiring, radio frequency, and other lab exercises. WITE 101 prepares students with the foundation to pursue guided field experiences, and industry-provided externships and certification options. Occupational Associate's Degree and Diploma program students are required to take WITL 101, which is a 1.5-credit lab course that supports the 4.5-credit didactic course WITE 101.

**WITE 111      Wireless Infrastructure Technology II      4.5 credit hours**

In this course, students will investigate concepts and applications with an emphasis on wireless infrastructure technology, including Passive Intermodulation (PIM) and Radio Frequency (RF) Drive testing. The impact of wireless technology on the *DNA* of telecommunications, Maintenance Operation Protocol (MOP), and Common Network Interface (CNI) will be examined. Utilizing spectrum analyzers, students will determine which modifications are needed to decrease interference in order to increase Wi-Fi system and wireless router performance within a range of applications. WITE II prepares students to pursue industry technical and certification opportunities. If Occupational Associate's Degree and Diploma program students elect to take WITE 111, they are required to take WITL 111, which is a 1-credit lab course that supports the 4.5-credit didactic course.

**WITL 111      Wireless Infrastructure Technology II      1.0 credit hours**

In this course, students will investigate concepts and applications with an emphasis on wireless infrastructure technology, including Passive Intermodulation (PIM) and Radio Frequency (RF) Drive testing. The impact of wireless technology on the *DNA* of telecommunications, Maintenance Operation Protocol (MOP), and Common Network Interface (CNI) will be examined. Utilizing spectrum analyzers, students will determine which modifications are needed to decrease interference in order to increase Wi-Fi system and wireless router performance within a range of applications. WITE II prepares students to pursue industry technical and certification opportunities. Occupational Associate's Degree and Diploma program students are required to take WITL 111, which is a 1.0-credit lab course that supports the 4.5-credit didactic course WITE 111.

***Bachelor's Degree Capstone***

**CAPS 490      Undergraduate Capstone      4.5 credit hours**

*Prerequisites or Concurrent: All core courses for a bachelor's degree*

In this course, the student will be provided with the opportunity to integrate the broad spectrum of what has been learned in previous courses into a final project of direct relevance to his or her academic and career objectives. Under the guidance of a Capstone Advisor, the student selects an applied project that addresses a defined problem within an organization, develops a strategy to mitigate or resolve the problem, and prepares a formal project report. The report must place the problem/issue and its solution in its cultural and historical context.