McLennan COMMUNITY COLLEGE

Associate of Applied Science
Media Communications/Technical Track

McLENNAN COMMUNITY COLLEGE

2019-2020

Degree Description

This program prepares students for the diverse and exciting world of digital media manipulation and production. Curriculum exposes students to various types of digital media including digital imaging and graphics, audio and video production, 2D and 3D animation, Web technologies, and desktop publishing. It prepares students for careers in graphic design, website production and management, video production, animation, gaming, electronic journalism, communications, etc. The Technical Track program focuses on the technical aspects of running a media server.

Marketable Skills

1. Understand and apply computing terminology and concepts used in the workplace- Critical Thinking/Communication.

2. Apply fundamentals of computer programming in structured design concepts- Critical Thinking/Communication.

3. Configure, use, and troubleshoot computer operating systems and/or application software Critical Thinking.

4. Use the Internet to locate, transfer, research and publish information at a level appropriate for the academic and work environment. Critical Thinking/Communication.

5. Install and evaluate desktop and network security protocols and principles- Critical Thinking.

Semester I	Hours
COSC 1301 Introduction to Computing	3 hours
ARTC 1302 Digital Imaging I [1]	3 hours
ARTV 2301 Animation 2D [7]	3 hours
IMED 1316 Web Design I	3 hours
COSC 1336 Programming Fundamentals I	3 hours
	15 hours

Semester II	Hours
ARTV 1351 Digital Video [6]	3 hours
IMED 2315 Web Page Design II [6]	3 hours
ITSE 1311 Beginning Web Programming [6]	3 hours
ITSW 1307 Introduction to Database	3 hours
ITSC 1305 Introduction to PC Operating Systems	3 hours
	15 hours

Semester III	Hours
Business elective ***or*** Speech elective [8]	3 hours
ENGL 1301 Composition I ***or*** ENGL 2311 Technical & Business Writing	3 hours
ARTS 1311 Design I (2-Dimensional)	3 hours
ITNW 1354 Implementing and Support Servers [3] ***or*** ITCC 1314 CCNA 1: Introduction to Networks [1,2]	3 hours
Social/Behavioral Science elective	3 hours
	15 hours

Semester IV	Hours
ITSY 1342 Information Technology Security	3 hours
IMED 2309 Internet Commerce [6]	3 hours
IMED 2313 Project Analysis & Design [5] ***or*** IMED 1366 Practicum - Web Page/Digital/Multimedia and Information Design ***or*** IMED 2388 Internship-Educational/Instruct Media	3 hours
POFT 2312 Business Correspondence & Communication	3 hours
Mathematics (college-level) ***or*** Life & Physical Science elective	3 hours
	15 hours

Total hours: **60 hours**

1 This course may be eligible for articulation through the statewide ATC program. Check with your high school counselor for more information.

2 McLennan is a CISCO Local Academy. This is one of four courses leading up to the CISCO Certified Network Administrator certification.

3 This course is designed to prepare students for the exams to receive the Microsoft Certified Professional (MCP) and Microsoft Certified Systems Administrator (MCSA) certification.

4 Choose one of these courses or get advisor consent to take another course.

5 Capstone course, which brings together knowledge and skills learned in other courses and applies them in decision-making situations and in completing job tasks. This Capstone course should be taken in the student's fall or spring last semester before graduation.

6 Only offered in spring semester

7 Only offered in fall semester

8 SPCH 1311, 1315, 1321

Electives/General Education Courses

Business

ACNT 1303 Introduction to Accounting I	3 hours
ACCT 2401 Principles of Financial Accounting	4 hours
BUSI 1301 Business Principles	3 hours

Life & Physical Science

BIOL 1406 Biology for Science Majors I	4 hours
BIOL 1407 Biology for Science Majors II	4 hours
BIOL 1408 Biology for Non-Science Majors I	4 hours
BIOL 1409 Biology for Non-Science Majors II	4 hours
BIOL 1411 General Botany	4 hours
BIOL 1413 General Zoology	4 hours
BIOL 2401 Anatomy & Physiology I	4 hours
BIOL 2402 Anatomy & Physiology II	4 hours
BIOL 2404 Anatomy & Physiology (specialized)	4 hours
CHEM 1405 Introductory Chemistry I	4 hours
CHEM 1411 General Chemistry I	4 hours
CHEM 1412 General Chemistry II	4 hours
ENVR 1301 Environmental Science I (lecture)	3 hours
ENVR 1101 Environmental Science I (lab)	1 hours
ENVR 1302 Environmental Science II - Lecture	3 hours
ENVR 1102 Environmental Science II (lab)	1 hours
ENVR 1401 Environmental Science I (lecture + lab)	4 hours
ENVR 1402 Environmental Science II	4 hours
GEOL 1301 Earth Sciences I for Non-Science Majors (lecture)	3 hours
GEOL 1101 Earth Sciences I for Non-Science Majors (lab)	1 hours
GEOL 1302 Earth Sciences II for Non-Science Majors (lecture)	3 hours
GEOL 1102 Earth Sciences II for Non-Science Majors (lab)	1 hours
GEOL 1303 Physical Geology (lecture)	3 hours
GEOL 1103 Physical Geology Laboratory	1 hours
GEOL 1304 Historical Geology (lecture)	3 hours
GEOL 1104 Historical Geology Laboratory	1 hours
GEOL 1401 Earth Sciences I for Non-Sciences Majors (lecture + lab)	4 hours
GEOL 1403 Physical Geology (lecture + lab)	4 hours
GEOL 1404 Historical Geology (lecture + lab)	4 hours
PHYS 1401 College Physics I	4 hours
PHYS 1402 College Physics II	4 hours
PHYS 1403 Stars and Galaxies	4 hours
PHYS 1404 Solar System	4 hours
PHYS 1405 Elementary Physics I	4 hours
PHYS 1407 Elementary Physics II	4 hours

Math

MATH 1314 College Algebra	3 hours
MATH 1316 Plane Trigonometry	3 hours
MATH 1324 Mathematics for Business & Social Sciences	3 hours
MATH 1325 Calculus for Business & Social Sciences	3 hours
MATH 1332 Contemporary Mathematics (Quantitative Reasoning)	3 hours
MATH 1342 Elementary Statistical Methods	3 hours
MATH 1350 Mathematics for Teachers I (Fundamentals of Mathematics I)	3 hours
MATH 1351 Mathematics for Teachers II (Fundamentals of Mathematics II)	3 hours
MATH 1442 Elementary Statistical Methods	4 hours
MATH 2305 Discrete Mathematics	3 hours
MATH 2318 Linear Algebra	3 hours
MATH 2320 Differential Equations	3 hours
MATH 2412 Pre-Calculus Mathematics	4 hours
MATH 2413 Calculus I	4 hours
MATH 2414 Calculus II	4 hours
MATH 2415 Calculus III	4 hours

Social/Behavioral Science

ANTH 2351 Cultural Anthropology	3 hours
CRIJ 1301 Introduction to Criminal Justice	3 hours
ECON 2301 Principles of Macroeconomics	3 hours
ECON 2302 Principles of Microeconomics	3 hours
ENGR 2308 Engineering Economics	3 hours
PSYC 2301 General Psychology	3 hours
SOCI 1301 Introduction to Sociology	3 hours
SOCI 1306 Social Problems	3 hours
SOCI 2326 Social Psychology	3 hours
SOCW 2361 Introduction to Social Work	3 hours

Speech

COMM 1307 Introduction to Mass Communication	3 hours
SPCH 1311 Introduction to Speech Communication	3 hours
SPCH 1315 Public Speaking	3 hours
SPCH 1318 Interpersonal Communication	3 hours
SPCH 1321 Business & Professional Communication	3 hours

Course Descriptions

COSC 1301 Introduction to Computing

Provides an overview of computer systems-hardware, operating systems, the Internet, and application software including word processing, spreadsheets, presentation graphics, and databases. Current topics such as the effect of computers on society, and the history and use of computers in business, educational, and other interdisciplinary settings are also studied. This course is not intended to count toward a student's major field of study in business or computer science. Semester Hours 3 (2 lec/2 lab)

ARTC 1302 Digital Imaging I

Introduces raster image editing and/or image creation software: scanning, resolution, file formats, output devices, color systems, and image-acquisitions. Semester Hours 3 (2 lec/2 lab)

ARTV 2301 Animation 2D

Teaches skill development in the use of software to develop storyboards and two dimensional animation including creating, importing, and sequencing media elements to create multimedia presentations. Emphasis on conceptualization, creativity, and visual aesthetics. Semester Hours 3 (2 lec/2 lab)

IMED 1316 Web Design I

Introduces instruction in web design and related graphic design including mark-up languages, and browser issues. Semester Hours 3 (2 lec/2 lab)

COSC 1336 Programming Fundamentals I

Introduces the fundamental concepts of structured programming and provides a comprehensive introduction to programming for computer science and technology majors. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing and debugging. This course assumes computer literacy. Semester Hours 3 (3 lec)

ARTV 1351 Digital Video

Develops skills in producing and editing video and sound for multimedia or Web productions. Emphasis is placed on the capture, editing, and outputting of video using a desktop digital video workstation. Semester Hours 3 (2 lec/2 lab)

IMED 2315 Web Page Design II

Studies mark-up language and advanced layout techniques for creating web pages. Emphasis on identifying the target audience and producing web sites, according to accessibility standards, cultural appearance, and legal issues. Prerequisites: Successful completion of IMED 1316 or equivalent introductory Web design course with instructor consent; knowledge of CSS and division tags important. Semester Hours 3 (2 lec/2 lab)

ITSE 1311 Beginning Web Programming

Skill development in Web page programming, including mark-up and scripting languages. Prerequisite: COSC 1336. Semester Hours 3 (2 lec/2 lab)

ITSW 1307 Introduction to Database

Introduces database theory and the practical applications of a database. Semester Hours 3 (2 lec/2 lab)

ITSC 1305 Introduction to PC Operating Systems

Introduction to personal computer operating systems, including installation, configuration, file management, memory and storage management, control of peripheral devices and use of utilities. Semester Hours 3 (2 lec/2 lab)

ENGL 1301 Composition I

Intensive study of and practice in writing processes, from invention and researching to drafting, revising, and editing, both individually and collaboratively. Emphasis is on effective rhetorical choices, including audience, purpose, arrangement, and style. Focus is on writing the academic essay as a vehicle for learning, communication, and critical analysis. Prerequisite: TSI complete in Reading and Writing or the equivalent. Semester Hours 3 (3 lec)

ENGL 2311 Technical & Business Writing

Intensive study of and practice in professional settings. Focus on the types of documents necessary to make decisions and take action on the job, such as proposals, reports, instructions, policies and procedures, e-mail messages, letters, and descriptions of products and services. Practice of individual and collaborative processes involved in the creation of ethical and efficient documents. Prerequisite: Passing score on writing portion of TSI Assessment or credit for ENGL 0301. Semester Hours 3 (3 lec)

ARTS 1311 Design I (2-Dimensional)

An introduction to the fundamental terminology, concepts, theory, and application of two-dimensional design. Semester Hours 3 (6 lec/studio plus 3 hours minimum out of class)

ITNW 1354 Implementing and Support Servers

Develops skills necessary to implement, administer, and troubleshoot information systems that incorporate servers in a networked computing environment. Prerequisite: ITSC 1305. Semester Hours 3 (2 lec/2 lab)

ITCC 1314 CCNA 1: Introduction to Networks

Covers networking architecture, structure, and functions; introduces the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media and operations to provide a foundation for the curriculum. Semester Hours 3 (2 lec/3 lab)

ITSY 1342 Information Technology Security

Instructs on security for network hardware, software, and data, including physical security, backup procedures, relevant tools, encryption, and protection from viruses. Students will learn to ensure the physical security of file servers and other network components using best practices; develop backup procedures to provide for data security; use network operating system features to implement network security; describe the nature of computer viruses, their methods of spreading, and means of protecting networks from viruses; use relevant tools to provide for network security; and use encryption techniques to protect network data. Semester Hours 3 (2 lec/2 lab)

IMED 2309 Internet Commerce

Gives an overview of the Internet as a marketing and sales tool with emphasis on developing a prototype for electronic commerce. Topics include database technology, creating websites in order to collect information, performing online transactions, and generating dynamic content. Offered only in spring semester. Prerequisites: COSC 1301 or BCIS 1305 or equivalent intro to computer course with consent of instructor; basic Web design skills suggested. Semester Hours 3 (2 lec/2 lab)

IMED 2313 Project Analysis & Design

Applies the planning and production processes for digital media projects. Emphasis on copyright and other legal issues, content design and production management. Prerequisites: ARTC 1302, IMED 1316 and ARTV 2301. Semester Hours 3 (2 lec/2 lab)

IMED 1366 Practicum - Web Page/Digital/Multimedia and Information Design

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisites: IMED 1316 and 2315. Semester Hours 3

IMED 2388 Internship-Educational/Instruct Media

Provides a work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisite: an approved workstation and consent of program director. Semester Hours 3 (15 lab)

POFT 2312 Business Correspondence & Communication

Presents the development of writing skills and presentation skills to produce effective business documents. Offered only in spring semester. Prerequisite: POFT 1301 with a grade of C or better. Semester Hours 3 (3 lec)

ACNT 1303 Introduction to Accounting I

A study of analyzing, classifying, and recording business transactions in a manual and computerized environment. Emphasis on understanding the complete accounting cycle and preparing financial statements, bank reconciliations, and payroll. May not be counted toward the associate degree if taken after successful completion of ACCT 2401. Semester Hours 3 (3 lec/lab)

ACCT 2401 Principles of Financial Accounting

This course is an introduction to the fundamental concepts of financial accounting as prescribed by U.S. Generally Accepted Accounting Principles (GAAP) as applied to transactions and events that affect business organizations. Students will examine the procedures and systems to accumulate, analyze, measure, and record financial transactions. Students will use recorded financial information to prepare a balance sheet, income statement, statement of cash flows, and statement of shareholders' equity to communicate the business entity's results of operations and financial position to uses of financial information who are external to the company. Students will study the nature of assets, liabilities, and owners' equity while learning to use reported financial information for purposes of making decisions about the company. Students will be exposed to International Financial Reporting Standards (IFRS). Prerequisites: ACNT 1303 with a C or better or permission of the director. Students must have passed the TSI Assessment or have credit for MATH 0307. Semester Hours 4 (3 lec/2 lab)

BUSI 1301 Business Principles

This course provides a survey of economic systems, forms of business ownership, and considerations for running a business. Students will learn various aspects of business, management, and leadership functions; organizational considerations; and decision-making processes. Financial topics are introduced, including accounting, money and banking, and securities markets. Also included are discussions of business challenges in the legal and regulatory environment, business ethics, social responsibility, and international business. Emphasized is the dynamic role of business in everyday life. Semester Hours 3 (3 lec)

BIOL 1406 Biology for Science Majors I

Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are included. NOTE: Must have passed the reading and writing portion of the TSI Assessment or have credit for INRW 0402. Semester Hours 4 (3 lec/3 lab)

BIOL 1407 Biology for Science Majors II

The diversity and classification of life will be studied, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals. Prerequisite: BIOL 1406 with a minimum grade of C. Semester Hours 4 (3 lec/3 lab)

BIOL 1408 Biology for Non-Science Majors I

Provides a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function, and reproduction. Semester Hours 4 (3 lec/3 lab)

BIOL 1409 Biology for Non-Science Majors II

This course will provide and reinforce a survey and of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology. Semester hours 4 (3 lec/3 lab)

BIOL 1411 General Botany

Fundamental biological concepts relevant to plant physiology, life cycle, growth and development, structure and function, and cellular and molecular metabolism. Includes the role of plants in the environment, evolution, and phylogeny of major plant groups, algae, and fungi. This course is intended for science majors. Semester Hours 4 (3 lec/3 lab)

BIOL 1413 General Zoology

Fundamental biological concepts relevant to animals, including systematics, evolution, structure and function, cellular and molecular metabolism, reproduction, development, diversity, phylogeny, and ecology. This course is intended for science majors. Semester Hours 4 (3 lec/3 lab)

BIOL 2401 Anatomy & Physiology I

Anatomy and Physiology I is the first part of a two-course sequence. It is a study of the structure and function of the human body including cells, tissues and organs of the following systems: integumentary, skeletal, muscular, and nervous and special senses. Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. NOTE: Must have passed the reading and writing portion of the TSI Assessment or have credit for INRW 0402. Semester Hours 4 (3 lec/3 lab)

BIOL 2402 Anatomy & Physiology II

Anatomy and Physiology II is the second part of a two-course sequence. It is a study of the structure and function of the human body including the following systems: endocrine, cardiovascular, immune, lymphatic, respiratory, digestive (including nutrition), urinary (including fluid and electrolyte balance), and reproductive (including human development and genetics). Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. Prerequisite: BIOL 2401 with a grade of C or better. Semester Hours 4(3 lec/3 lab)

BIOL 2404 Anatomy & Physiology (specialized)

Study of the structure and function of human anatomy, including the neuroendocrine, integumentary, musculoskeletal, digestive, urinary, reproductive, respiratory, and circulatory systems. Content may be either integrated or specialized. Semester Hours 4 (3 lec/3 lab)

CHEM 1405 Introductory Chemistry I

Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry, and environmental/consumer chemistry. Designed for allied health students and for students who are not science majors. Semester Hours 4 (3 lec/3 lab)

CHEM 1411 General Chemistry I

Fundamental principles of chemistry for majors in the sciences, health sciences, and engineering; topics include measurements, fundamental properties of matter, states of matter, chemical reactions, chemical stoichiometry, periodicity of elemental properties, atomic structure, chemical bonding, molecular structure, solutions, properties of gases, and an introduction to thermodynamics and descriptive chemistry. Includes basic laboratory experiments supporting theoretical principles presented in CHEM 1411, as well as an introduction of the scientific method, experimental design, data collection and analysis, and preparation of laboratory reports. Prerequisite: MATH 1314 with a minimum grade of C, passing score on non-credit equivalency exam for MATH 1314, or consent of division chair. High school chemistry is strongly recommended. Semester Hours 4 (3 lec/3 lab)

CHEM 1412 General Chemistry II

Chemical equilibrium, phase diagrams and spectrometry, acid-base concepts, thermodynamics, kinetics, electrochemistry, nuclear chemistry, an introduction to organic chemistry and descriptive inorganic chemistry. Includes basic laboratory experiments supporting theoretical principles presented in CHEM 1412, as well as an introduction of the scientific method, experimental design, chemical instrumentation, data collection and analysis, and preparation of laboratory reports. Prerequisite: CHEM 1411 with a grade of C or better. Semester Hours 4 (3 lec/4 lab)

ENVR 1301 Environmental Science I (lecture)

A survey of the forces, including humans, that shape our physical and biologic environment, and how they affect life on Earth. Introduction to the science and policy of global and regional environmental issues, including pollution, climate change, and sustainability of land, water, and energy resources. Semester Hours 3 (3 lec)

ENVR 1101 Environmental Science I (lab)

This laboratory-based course accompanies ENVR 1301 Environmental Science (lecture). Activities will cover methods used to collect and analyze environmental data. Prerequisite: Credit for or concurrent enrollment in ENVR 1301. Semester Hour 1 (3 lab)

ENVR 1302 Environmental Science II - Lecture

General interest course requiring a minimum of previous science background and relating scientific knowledge to problems involving energy and the environment. Semester Hours 3 (3 lec)

ENVR 1102 Environmental Science II (lab)

General interest course requiring a minimum of previous science background and relating scientific knowledge to problems involving energy and the environment. Lab exercises relate scientific knowledge to problems involving energy and the environment. Includes research projects related to the historical development of current environmental practices and concerns. May include other research projects dealing with current or potential environmental concerns. Prerequisite: Credit for or concurrent enrollment in ENVR 1302. Semester Hour 1 (3 lab)

ENVR 1401 Environmental Science I (lecture + lab)

A survey of the forces, including humans, that shape our physical and biologic environment, and how they affect life on Earth. Introduction to the science and policy of global and regional environmental issues, including pollution, climate change, and sustainability of land, water, and energy resources. The laboratory activities will cover methods used to collect and analyze environmental data. Semester Hours 4 (3 lec/3 lab)

ENVR 1402 Environmental Science II

General interest course requiring a minimum of previous science background and relating scientific knowledge to problems involving energy and the environment. Lab exercises relate scientific knowledge to problems involving energy and the environment. Includes research projects related to the historical development of current environmental practices and concerns. May include other research projects dealing with current or potential environmental concerns. Semester Hours 4 (3 lec/3 lab)

GEOL 1301 Earth Sciences I for Non-Science Majors (lecture)

Survey of geology, meteorology, oceanography and astronomy. Semester Hours 3 (3 lec)

GEOL 1101 Earth Sciences I for Non-Science Majors (lab)

This laboratory-based course accompanies GEOL 1301 Earth Sciences I. Activities will cover methods used to collect and analyze data in geology, meteorology, oceanography and astronomy. Prerequisite: GEOL 1301. Semester Hours 1 (3 lab)

GEOL 1302 Earth Sciences II for Non-Science Majors (lecture)

Extension of the study of geology, astronomy, meteorology and oceanography, focusing on natural resources, hazards and climate variability. Prerequisite: GEOL 1401, 1403 or 1404. Semester Hours 3 (3 lec)

GEOL 1102 Earth Sciences II for Non-Science Majors (lab)

This laboratory-based course accompanies GEOL 1302 Earth Sciences II. Activities will focus on methods used to collect and analyze data related to natural resources, hazards and climate variability. Prerequisite: Credit for or concurrent enrollment in GEOL 1302. Semester Hour 1 (3 lab)

GEOL 1303 Physical Geology (lecture)

Introduction to the study of the materials and processes that have modified and shaped the surface and interior of Earth over time. These processes are described by theories based on experimental data and geologic data gathered from field observations. Semester Hours 3 (3 lec)

GEOL 1103 Physical Geology Laboratory

This laboratory-based course accompanies GEOL 1303 Physical Geology. Laboratory activities will cover methods used to collect and analyze earth science data. Prerequisite: GEOL 1303 or concurrent enrollment. Semester Hour 1 (3 lab)

GEOL 1304 Historical Geology (lecture)

A comprehensive survey of the history of life and major events in the physical development of Earth as interpreted from rocks and fossils. Prerequisites: GEOL 1303 or 1403. Semester Hours 3 (3 lec)

GEOL 1104 Historical Geology Laboratory

This laboratory-based course accompanies GEOL 1304 Historical Geology. Laboratory activities will introduce methods used by scientists to interpret the history of life and major events in the physical development of earth from rocks and fossils. Prerequisite: GEOL 1304. Semester Hour 1 (3 lab)

GEOL 1401 Earth Sciences I for Non-Sciences Majors (lecture + lab)

Survey of geology, meteorology, oceanography, and astronomy. The lab activities will cover methods used to collect and analyze data in geology, meteorology, oceanography and astronomy. Semester Hours 4 (3 lec/3 lab)

GEOL 1403 Physical Geology (lecture + lab)

Introduction to the study of the materials and processes that have modified and shaped the surface and interior of Earth over time. These processes are described by theories based on experimental data and geologic data gathered from field observations. Laboratory activities will cover methods used to collect and analyze earth science data. Semester Hours 4 (3 lec/3 lab)

GEOL 1404 Historical Geology (lecture + lab)

A comprehensive survey of the history of life and major events in the physical development of Earth as interpreted from rocks and fossils. Laboratory activities will introduce methods used by scientists to interpret the history of life and major events in the physical development of earth from rocks and fossils. Prerequisite: GEOL 1303 or 1403. Semester Hours 4 (3 lec/3 lab)

PHYS 1401 College Physics I

Fundamental principles of physics, using algebra and trigonometry; the principles and applications of classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton's Laws of Motion, and gravitation and other fundamental forces; with emphasis on problem solving. Prerequisite: MATH 1316, 2412 or 2413 with a grade of C or better. Semester Hours 4 (3 lec/3 lab)

PHYS 1402 College Physics II

Fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electrostatics, electromagnetism, waves, sound, light, optics, and modern physics topics; with emphasis on problem solving. Prerequisite: PHYS 1401. Semester Hours 4 (3 lec/3 lab)

PHYS 1403 Stars and Galaxies

Study of stars, galaxies, and the universe outside our solar system. Semester Hours 4 (3 lec/3 lab)

PHYS 1404 Solar System

Study of the sun and its solar system, including its origin. Semester Hours 4 (3 lec/3 lab)

PHYS 1405 Elementary Physics I

Conceptual level survey of topics in physics intended for liberal arts and other non-science majors. Semester Hours 4 (3 lec/3 lab)

PHYS 1407 Elementary Physics II

Conceptual level survey of topics in physics intended for liberal arts and other non-science majors. Semester Hours 4 (3 lec/3 lab)

MATH 1314 College Algebra

In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included. Graphing calculator required. Recommended Prerequisite: TSI complete. Prerequisite: MATH 0311 or consent of division chair. Semester Hours 3 (3 lec)

MATH 1316 Plane Trigonometry

In-depth study and applications of trigonometry including definitions, identities, inverse functions, solutions of equations, graphing, and solving triangles. Additional topics such as vectors, polar coordinates and parametric equations may be included. Graphing calculator required. Prerequisite: MATH 1314 with a minimum grade of C, or passing score on non-credit equivalency exam for MATH 1314, or consent of division chair. Semester Hours 3 (3 lec)

MATH 1324 Mathematics for Business & Social Sciences

The application of common algebraic functions, including polynomial, exponential, logarithmic and rational, to problems in business, economics and the social sciences are addressed. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices, linear programming; and probability, including expected value. Prerequisite: MATH 0311 or consent of division chair. Semester Hours 3 (3 lec)

MATH 1325 Calculus for Business & Social Sciences

This course is the basic study of limits and continuity, differentiation, optimization and graphing, and integration of elementary functions, with emphasis on applications in business, economics and social sciences. This course is not a substitute for MATH 2413, Calculus I. Prerequisite: MATH 1324 or equivalent or consent of division chair. Semester Hours 3 (3 lec)

MATH 1332 Contemporary Mathematics (Quantitative Reasoning)

Intended for Non STEM (Science, Technology, Engineering, and Mathematics) majors. Topics include introductory treatments of sets and logic, financial mathematics, probability and statistics with appropriate applications. Number sense, proportional reasoning, estimation, technology, and communication should be embedded throughout the course. Additional topics may be covered. Graphing calculator required. Prerequisite: TSI math complete or MATH 0308 or consent of division chair. Semester Hours 3 (3 lec)

MATH 1342 Elementary Statistical Methods

Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Use of appropriate technology is recommended. Graphing calculator required. Prerequisite: TSI math complete or MATH 0308 or completion of college-level math course or consent of division chair. Semester Hours 3 (3 lec)

MATH 1350 Mathematics for Teachers I (Fundamentals of Mathematics I)

This course is intended to build or reinforce a foundation in fundamental mathematics concepts and skills. It includes the conceptual development of the following: sets, functions, numeration systems, number theory, and properties of the various number systems with an emphasis on problem solving and critical thinking. Prerequisite: MATH 1314/1414 College Algebra or the equivalent or consent of division chair. Semester Hours 3 (3 lec)

MATH 1351 Mathematics for Teachers II (Fundamentals of Mathematics II)

This course is intended to build or reinforce a foundation in fundamental mathematics concepts and skills. It includes the concepts of geometry, measurement, probability, and statistics with an emphasis on problem solving and critical thinking. Prerequisite: MATH 1314/1414 College Algebra Semester Hours 3 (3 lec)

MATH 1442 Elementary Statistical Methods

Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. The course will include application problems and projects using real world data. Use of appropriate technology is recommended. Prerequisites: MATH 1442 or consent of the division chair. Semester Hours 4 (3 lec/2 lab)

MATH 2305 Discrete Mathematics

A course designed to prepare math, computer science, and engineering majors for a background in abstraction, notation, and critical thinking for the mathematics most directly related to computer science. Topics include: logic, relations, functions, basic set theory, countability and counting arguments, proof techniques, mathematical induction, combinatorics, discrete probability, recursion, sequence and recurrence, elementary number theory, graph theory, and mathematical proof techniques. Prerequisite: MATH 2413 with a grade of C or better. Semester Hours 3 (3 lec)

MATH 2318 Linear Algebra

Introduces and provides models for application of the concepts of vector algebra. Topics include finite dimensional vector spaces and their geometric significance; representing and solving systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion; matrices; determinants; linear transformations; quadratic forms; eigenvalues and eigenvector; and applications in science and engineering. Graphing calculator required. Prerequisite or corequisite: MATH 2414 or consent of division chair. Semester Hours 3 (3 lec)

MATH 2320 Differential Equations

Ordinary differential equations, including linear equations, systems of equations, equations with variable coefficients, existence and uniqueness of solutions, series solutions, singular points, transform methods, and boundary value problems; application of differential equations to real-world problems. Graphing calculator required. Prerequisite or corequisite: MATH 2415 or consent of division chair. Semester Hours 3 (3 lec)

MATH 2412 Pre-Calculus Mathematics

In-depth combined study of algebra, trigonometry, and other topics for calculus readiness. Prerequisite: MATH 1314 with a minimum grade of C, or passing score on non-credit equivalency exam for MATH 1314, or consent of division chair. Semester Hours 4 (4 lec)

MATH 2413 Calculus I

Limits and continuity; the Fundamental Theorem of Calculus; definition of the derivative of a function and techniques of differentiation; applications of the derivative to maximizing or minimizing a function; the chain rule, mean value theorem, and rate of change problems; curve sketching; definite and indefinite integration of algebraic, trigonometric, and transcendental functions, with an application to calculation of areas. Graphing calculator required. Prerequisite: MATH 2412 with a minimum grade of C, or both MATH 1314 and MATH 1316 with minimum grades of C, or passing score on non-credit equivalency exam for MATH 2412, or consent of division chair. Semester Hours 4 (4 lec)

MATH 2414 Calculus II

Differentiation and integration of transcendental functions; parametric equations and polar coordinates; techniques of integration; sequences and series; improper integrals. Graphing calculator required. Prerequisite: MATH 2413 with a grade of C or better or consent of division chair. Semester Hours 4 (4 lec)

MATH 2415 Calculus III

Advanced topics in calculus, including vectors and vector-valued functions, partial differentiation, Lagrange multipliers, multiple integrals, and Jacobians; application of the line integral, including Green's Theorem, the Divergence Theorem, and Stokes' Theorem. Graphing calculator required. Prerequisite: MATH 2414 with a grade of C or better or consent of division chair. Semester Hours 4 (4 lec)

ANTH 2351 Cultural Anthropology

The study of human cultures. Topics may include social organization, institutions, diversity, interactions between human groups, and ethics in the discipline. Prerequisite: Must have passed the reading portion of the TSI Assessment or have credit for INRW 0402. Semester Hours 3 (3 Lec)

CRIJ 1301 Introduction to Criminal Justice

History, philosophy, and ethical considerations of criminal justice; the nature and impact of crime; and an overview of the criminal justice system, including law enforcement and court procedures. Semester Hours 3 (3 lec)

ECON 2301 Principles of Macroeconomics

An analysis of the economy as a whole including measurement and determination of aggregate demand and aggregate supply, national income, inflation, and unemployment. Other topics include international trade, economic growth, business cycles, fiscal policy and monetary policy. Prerequisite: Must have passed the TSI Assessment or be concurrently enrolled in READ 0302. Semester Hours 3 (3 lec)

ECON 2302 Principles of Microeconomics

Analysis of the behavior of individual economic agents, including consumer behavior and demand, producer behavior and supply, price and output decisions by firms under various market structures, factor markets, market failures, and international trade. Prerequisite: Must have passed the TSI Assessment or be concurrently enrolled in READ 0302. Semester Hours 3 (3 lec)

ENGR 2308 Engineering Economics

Methods used for determining the comparative financial desirability of engineering alternatives. Provides the student with the basic tools required to analyze engineering alternatives in terms of their worth and cost, an essential element of engineering practice. The student is introduced to the concept of the time value of money and the methodology of basic engineering economy techniques. The course will address some aspects of sustainability and will provide the student with the background to enable them to pass the Engineering Economy portion of the Fundamentals of Engineering exam. Prerequisite: MATH 2413 with a grade of C or better. Semester Hours 3 (3 lec)

PSYC 2301 General Psychology

General Psychology is a survey of the major psychological topics, theories and approaches to the scientific study of behavior and mental processes. NOTE: Must have passed the reading portion of the TSI Assessment or have credit for INRW 0402. Semester Hours 3 (3 lec)

SOCI 1301 Introduction to Sociology

The scientific study of human society, including ways in which groups, social institutions, and individuals affect each other. Causes of social stability and social change are explored through the application of various theoretical perspectives, key concepts, and related research methods of sociology. Analysis of social issues in their institutional context may include topics such as social stratification, gender, race/ethnicity, and deviance. Semester Hours 3 (3 lec)

SOCI 1306 Social Problems

Application of sociological principles and theoretical perspectives to major social problems in contemporary society such as inequality, crime and violence, substance abuse, environmental issues, deviance, or family problems. Semester Hours 3 (3 lec)

SOCI 2326 Social Psychology

Study of individual behavior within the social environment. May include topics such as the socio-psychological process, attitude formation and change, interpersonal relations, and group processes. Cross-listed as PSYC 2319. NOTE: Credit will not be given for both PSYC 2319 and SOCI 2326. Prerequisite: PSYC 2301 or SOCI 1301. Semester Hours 3 (3 lec)

SOCW 2361 Introduction to Social Work

An overview of the history and development of social work as a profession. The course is designed to foster a philosophical, historical, and critical understanding of the social work profession, including social work values, ethics, and areas of practice utilized under a Generalist Intervention Model. Semester Hours 3 (3 lec)

COMM 1307 Introduction to Mass Communication

Survey of basic content and structural elements of mass media and their functions and influences on society. Semester Hours 3 (3 lec)

SPCH 1311 Introduction to Speech Communication

Introduces basic human communication principles and theories embedded in a variety of contexts, including interpersonal, small group, and public speaking. Semester Hours 3 (3 lec)

SPCH 1315 Public Speaking

Application of communication theory and practice to the public speaking context, with emphasis on audience analysis, speaker delivery, ethics of communication, cultural diversity, and speech organizational techniques to develop students' speaking abilities, as well as ability to effectively evaluate oral presentations. Semester Hours 3 (3 lec)

SPCH 1318 Interpersonal Communication

Application of communication theory to interpersonal relationship development, maintenance, and termination in relationship contexts, including friendships, romantic partners, families, and relationships with co-workers and supervisors. Semester Hours 3 (3 lec)

SPCH 1321 Business & Professional Communication

Study and application of communication within the business and professional context. Special emphasis will be given to communication competencies in presentations, dyads, teams, and technologically mediated formats. Semester Hours 3 (3 lec)