McLennan COMMUNITY COLLEGE

Associate of Applied Science
Audio Technology

McLENNAN COMMUNITY COLLEGE

2020-2021

Degree Description

Students completing this program are prepared to assume audio production positions in the music industry.

Electives may be selected from courses with MUSC, MUSB, and MUSC rubrics.

Other courses may be substituted with Program Coordinator's approval.

Marketable Skills

1. Students will obtain skills that involve creativity, critical thinking, problem solving, and active listening. Students will also learn to be adaptable and work with a team.

2. Employment opportunities include audio producer, recording engineer, sound designer and MIDI programmer.

3. Potential employers include advertising agencies,video and audio production companies, recording studios, record labels, and publishing companies.

Semester I	Hours
MUSC 1213 Commercial Music Theory I	2 hours
MUSC 1311 Commercial Music Sight Singing and Ear Training I	3 hours
MUSP 1113 Introductory Group Piano I	1 hours
MUSI 1310 American Music	3 hours
MUSC 1327 Audio Engineering I	3 hours
MUSB 1305 Survey of Music Business	3 hours
	15 hours

Semester II	Hours
MUSC 2213 Commercial Music Theory II	2 hours
MUSC 2311 Commercial Music Sight Singing & Ear Training II	3 hours
MUSP 1114 Introductory Group Piano II	1 hours
MUSI 2389 Academic Cooperative	3 hours
MUSC 2427 Audio Engineering II	4 hours
	13 hours

Summer Semester	Hours
Social/Behavioral Science elective	3 hours
Mathematics (college-level) ***or*** Life & Physical Science elective	3 hours
	6 hours

Semester III	Hours
MUSC 2131 Commercial Music Sight Singing & Ear Training III	1 hours
MUSC 2330 Commercial Music Arranging and Composition	3 hours
MUSC 1331 MIDI I (Music Instrument Digital Interface)	3 hours
MUSC 2447 Audio Engineering III	4 hours
MUSC 2286 Internship - Recording Arts Technician	2 hours
	13 hours

Semester IV	Hours
MUSC 2132 Commercial Music Sight Singing & Ear Training IV	1 hours
MUSC 1321 Songwriting I	3 hours
MUSC 2448 Audio Engineering IV [1]	4 hours
MUSC 2286 Internship - Recording Arts Technician	2 hours
ENGL 1301 Composition I	3 hours
	13 hours

Total hours: **60 hours**

[1] All students graduating from Commercial Music programs (A.A.S. and certificates) must complete a Capstone Project, which will be graded by a panel of Commercial Music faculty. Project examples: portfolio review, full-length public performance, comprehension test, etc. Each student will develop a Capstone contract with the program coordinator.

Electives/General Education Courses

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 1333 Cont Math II: Ap Math Quantitative Rsng	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

Course Descriptions

MUSC 1213 Commercial Music Theory I

Introduction to apply chord progressions, song forms, and harmonic techniques used in commercial music. Topics include modern chord notation and chord voicings. Semester Hours 2 (3 lec)

MUSC 1311 Commercial Music Sight Singing and Ear Training I

Introduction to basic aural, visual, and vocal experiences in dictation and singing at sight with emphasis on identification of chord progression, motion, and melody/harmony relationship of popular music. Corequisites: MUSC 1311 and MUSC 2313. Semester Hours 3 (3 lec/lab)

MUSP 1113 Introductory Group Piano I

Fundamentals of playing various accompaniment patterns with chords. Includes reading standard notation, basic scales, and learning introductory improvisational skills. Semester Hour 1 (2 lab)

MUSI 1310 American Music

General survey of various styles of music in America. Topics may include jazz, ragtime, folk, rock, and contemporary art music. Satisfies general humanities elective requirements. Semester Hours 3 (3 lec)

MUSC 1327 Audio Engineering I

Overview of the recording studio. Includes basic studio electronics and acoustic principles, waveform properties, microphone concepts and placement techniques, studio setup and signal flow, console theory, signal processing concepts, multi-track principles and operation, and an overview of mixing and editing. Semester Hours 3 (2 lec/3 lab)

MUSB 1305 Survey of Music Business

Introduces overview of the music industry including songwriting, live performance, the record industry, music merchandising, contracts and licenses, and career opportunities. Semester Hours 3 (3 lec)

MUSC 2213 Commercial Music Theory II

Continuation of Commercial Music Theory I. Emphasizes harmonic and melodic analysis, extended chord theory, and modal and altered scales. Prerequisite: CMUS 1179 or MUSC 2311 with a grade of C or better. Semester Hours 1 (3 lec/lab)

MUSC 2311 Commercial Music Sight Singing & Ear Training II

Continuation of Commercial Music Sight Singing and Ear Training I with emphasis on chromatic tonalities and melodies. Teaches the student to sight sing selected melodies in chromatic tonalities and transcribe dictation of selected rhythmic patterns, chromatic melodies, and intermediate chord progressions. Prerequisites: MUSC 1113 and MUSC 1311 with a grade of C or better. Semester Hours 3 (3 lec/lab)

MUSP 1114 Introductory Group Piano II

Continuation of playing various accompaniment patterns with chords. Includes reading standard notation, scales, and learning improvisational skills. Semester Hour 1 (2 lab)

MUSI 2389 Academic Cooperative

An instructional program designed to integrate on-campus study with practical hands-on experience. In conjunction with class seminars, the student will set specific individual goals and objectives in the study of music. Semester Hours 3 (3 lec)

MUSC 2427 Audio Engineering II

Implementation of the recording process, microphones, audio console, multi-track recorder, and signal processing devices. Prerequisite: MUSC 1327 or CMUS 1340 with a grade of C or better. Semester Hours 4 (2 lec/3 lab)

MUSC 2131 Commercial Music Sight Singing & Ear Training III

Continuation of Commercial Music Sight Singing and Ear Training II. Prerequisite: CMUS 1180, MUSC 2213, CMUS 1114 or MUSC 2311 with a grade of C or better. Semester Hour 1 (3 lec/lab)

MUSC 2330 Commercial Music Arranging and Composition

Presentation of arranging and composition for projects in industry recognized genres including songwriting, show writing, video, and film. Prerequisite: MUSC 1321. Semester Hours 3 (3 lec)

MUSC 1331 MIDI I (Music Instrument Digital Interface)

Introduces Musical Instrument Digital Interface (MIDI) systems and applications. Topics include the history and evolution of MIDI, the MIDI language, and typical implementation of MIDI applications in the studio environment using software-based sequencing programs. Semester Hours 3 (2 lec/2 lab)

MUSC 2447 Audio Engineering III

Advanced practice of procedures and techniques in recording and manipulating audio. Includes digital audio editing, advanced recording techniques, and advanced engineering projects. Prerequisite: MUSC 2427. Corequisite: MUSC 2286. Semester Hours 4 (2 lec/2 lab)

MUSC 2286 Internship - Recording Arts Technician

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. Presents the theory, concepts, and skills involving the tools, materials, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, and legal systems associated with the workplace. Students will demonstrate ethical behavior, safety practices, interpersonal and teamwork skills,and appropriate verbal and written communications in the workplace. This course will emphasize the audio recording industry. Prerequisite: MUSC 2427 or CMUS 1341 with a grade of C or better. Corequisite: MUSC 2447. Semester Hours 2 (15 lab)

MUSC 2132 Commercial Music Sight Singing & Ear Training IV

Continuation of Commerical Music Sight Singing and Ear Training III with emphasis on advanced rhythms and melodies and multivoice chord progression. Prerequisite MUSC 2131 or CMUS 2193 with a grade of C or better. Semester Hour 1 (3 lec/lab)

MUSC 1321 Songwriting I

Introduction to the techniques of writing marketable songs, including the writing of lyrics and melodies, setting lyrics to music, developing lyrical and musical "hooks," analyzing the marketplace, and developing a production plan for a song demo. Prerequisites: CMUS 1180, MUSC 2213, CMUS 1114 or MUSC 2311 with a grade of C or better. Semester Hours 3 (3 lec/lab)

MUSC 2448 Audio Engineering IV

Advanced recording, mixing, arranging and editing. Includes the role of the producer in session planning, analyzing projects, communication, budgeting, business aspects, technical considerations, and music markets. Capstone course for Commercial Music Audio Technology AAS Degree. Prerequisite: MUSC 2447 or CMUS 2313 with a grade of C or better. Semester Hours 4 (2 lec/2 lab)

MUSC 2286 Internship - Recording Arts Technician

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. Presents the theory, concepts, and skills involving the tools, materials, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, and legal systems associated with the workplace. Students will demonstrate ethical behavior, safety practices, interpersonal and teamwork skills,and appropriate verbal and written communications in the workplace. This course will emphasize the audio recording industry. Prerequisite: MUSC 2427 or CMUS 1341 with a grade of C or better. Corequisite: MUSC 2447. Semester Hours 2 (15 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)

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. Prerequisite: TSI math complete or MATH 0311. 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: TSI math complete or MATH 0311. 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 2313 or 2413 - Calculus I. Prerequisite: MATH 1314 or MATH 1324, minimum grade C. 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 1333 Cont Math II: Ap Math Quantitative Rsng

Topics may include introductory treatments of unit analysis, sets, logic, number systems, number theory, relations, functions, probability and statistics. Appropriate applications specific to a particular major or workforce area are used throughout the course. Emphasizes critical thinking and problem-solving skills. Prerequisites: MATH 0307, MATH 0308 or appropriate score on the TSI placement test. 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 2414 minimum grade of C. 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

This course provides a historical and philosophical overview of the American criminal justice system, including the nature, extent, and impact of crime; criminal law; and justice agencies and processes, and an overview of the criminal justice system, including law enforcement and court procedures. Semester Hours 3 (3 lec)

ECON 2301 Principles of Macroeconomics

Analyzes 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 INRW 0402. Semester Hours 3 (3 lec)

ECON 2302 Principles of Microeconomics

Analyzes 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 INRW 0402. 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)
