McLennan COMMUNITY COLLEGE

Certificate of Completion
Forensic Science

McLENNAN COMMUNITY COLLEGE

2022-2023

Degree Description

The objective of these criminal justice courses is to prepare students for careers in criminal justice with an understanding of the criminal justice system in state, county and municipal law enforcement; corrections; courts; security; and other criminal justice-related agencies. Curricula in law enforcement and corrections are available to meet the different needs of the student by teaching workplace competencies.

A grade of C or higher is required in all Criminal Justice classes for graduation.

Marketable Skills 1.Demonstrate Critical Thinking skills to assess and evaluate information in stressful situations. 2.Self-management to plan and organize task in a demanding corrections environment without close supervision.

3.Effectively communicate verbally and in writing. 4.Function in a team setting to accomplish goals and tasks. 5.Make appropriate ethical decisions using stated policy

and procedures

6.Skill to overcome negative situations and adversity to accomplish goals while maintaining a professional demeanor.

Semester I	Hours
CRIJ 1301 Introduction to Criminal Justice [1]	3 hours
BIOL 1408 Biology for Non-Science Majors I	4 hours
CRIJ 1306 Court Systems and Practices	3 hours
CRIJ 2314 Criminal Investigation	3 hours
	13 hours

Semester II	Hours
PSYC 2301 General Psychology	3 hours
BIOL 1409 Biology for Non-Science Majors II ***or*** BIOL 2404 Anatomy & Physiology (specialized) ***or*** CHEM 1405 Introductory Chemistry I	4 hours
Mathematics (college-level)	3 hours
CJSA 1308 Criminalistics I	3 hours
	13 hours

Semester III	Hours
CJSA 2471 Forensic Science I	4 hours
COSC 1301 Introduction to Computing	3 hours
CRIJ 2328 Police Systems & Practices	3 hours
CJSA 1372 Forensic Art ***or*** CJSA 1373 Forensic Anthropology	3 hours
CRIJ 1307 Crime In America	3 hours
	16 hours

Semester IV	Hours
CJSA 2472 Forensic Science II	4 hours
CJSA 2389 Internship - Criminal Justice	3 hours
CRIJ 1310 Fundamentals Criminal Law [1]	3 hours
CJSA 1400 Death Investigation I	4 hours
	14 hours

Total hours: **56 hours**

[1] May be eligible for articulation with a high school that has a current articulation agreement with McLennan. See the high school counselor for information.

Electives/General Education Courses

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 1414 College Algebra (Stem Intensive)	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

Course Descriptions

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)

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)

CRIJ 1306 Court Systems and Practices

This course is a study of the court system as it applies to the structures, procedures, practices and sources of law in American courts, using federal and Texas statutes and case law. Semester Hours 3 (3 lec)

CRIJ 2314 Criminal Investigation

Investigative theory, collection and preservation of evidence, sources of information, interview and interrogation, uses of forensic sciences, and case and trial preparation. 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)

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 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)

CJSA 1308 Criminalistics I

Introduction to the field of criminalistics. Topics include the application of scientific and technical methods in the investigation of crime including location, identification, and handling of evidence for scientific analysis. Semester Hours 3 (3 lec)

CJSA 2471 Forensic Science I

An introduction to crime scene investigation, evidence gathering, and preservation. Utilizing lecture and lab, this course presents the methods, procedures, and techniques for the analysis and preservation of crime scene evidence appropriate for first responders to a crime scene. Includes the use of scientific instrumentation to perform trace analysis of hair and fiber, stains, epithelial cells, latent fingerprints, DNA, and other basic evidence gathering techniques. Additional skills and knowledge will be obtained from guest speakers and local documented cases. In the process, students will gain hands-on experience as well as practical understanding of the basic operation of a busy forensic lab. Semester Hours 4

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)

CRIJ 2328 Police Systems & Practices

This course examines the establishment, role and function of police in a democratic society. It will focus on types of police agencies and their organizational structure, police-community interaction, police discretion; police ethics, and use of authority and current and future issues. Semester Hours 3 (3 lec)

CJSA 1372 Forensic Art

Course addresses forensic art reconstruction techniques that are used for the postmortem identification of persons and the identification/location of missing or wanted individuals, including age progressions, reconstructive and composite drawings, clay construction of a skull and muscles and clay reconstruction of appearance on a plastic skull model. Semester Hours 3 (2 lec/2 lab)

CJSA 1373 Forensic Anthropology

This online course surveys the recovery and analysis of skeletal remains. Estimation of biological factors such as age at death, sex, ancestry, stature, pathology and time since death will be explored. The role of physical anthropology in criminal investigation will be discussed. Semester Hours 3 (3 lec)

CRIJ 1307 Crime In America

American crime problems in historical perspective, social and public policy factors affecting crime, impact and crime trends, social characteristics of specific crimes, and prevention of crime. Semester Hours 3 (3 lec)

CJSA 2472 Forensic Science II

A forensic science lecture/lab course focused on research in adolescent and adult neuropsychology. A study of the latest research from neuroimaging related to biological templates for violence within Paul MacLean's Triune Brain paradigm. Explores the developmental sequencing and powerful illumination of the brain's centers of addiction and the impact of neurocriminalistics, such as brain mapping and brain fingerprinting. The psychopathology and known offender characteristics will be analyzed and discussed. Also demonstrated are how forensic specialists analyze mens rea (the criminal mind), MO (modus operandi), signature, and criminal aftermath activity as part of crime scene analysis. Prerequisite: CJSA 2471. Semester Hours 4 (3 lec/2 lab)

CJSA 2389 Internship - Criminal Justice

This course serves as the Capstone for the Level II Certificate within the Criminal Justice program. Semester Hours 3

CRIJ 1310 Fundamentals Criminal Law

This course is the study of criminal law including application of definitions, statutory elements, defenses and penalties using Texas statutes, the Model Penal Code, and case law. The course also analyzes the philosophical and historical development of criminal law and criminal culpability. Semester Hours 3 (3 lec)

CJSA 1400 Death Investigation I

Students will develop concepts, investigation processes, scene management, required documentation and case management for incidences of natural, accidental and suicidal deaths. Students will follow the Department of Justice National Guidelines for Death Investigation and meet the criteria for academic credit recognition from the American Board of Medicolegal Death Investigators. Semester Hours 4 (3 lec/2 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 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 1414 College Algebra (Stem Intensive)

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. Semester hours 4 (4 lec)

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)