COASTAL STUDIES (CSTL)

CSTL 1013 — Coastal Science **3 credit hours**
Lecture Hours:3; Lab Hours:0 This course addresses ecological engineering/ecosystem restoration. Topics include river restoration, wetland creation and restoration, coastal restoration, and treatment wetlands.
Schedule type: Independent Study, Lecture, Web

CSTL 1114 — Computer Graphs & Maps **4 credit hours**
Lecture Hours: 4; Lab Hours: 0 Introductory review of the application of computers to the production of graphs and thematic maps for geographical analysis. Spreadsheets, ArcGIS, and other data visualizations software will be used to produce graphs, charts, and maps.
Schedule type: Web

CSTL 1123 — Fundamentals of Mapping & GIS **3 credit hours**
Lecture Hours: 3; Lab Hours: 0 Lecture and project-based introduction to the basic concepts and technologies important to mapping, geographic information systems (GIS), and image analysis. Topics include map design fundamentals, thematic mapping, statistical cartography, the relationship of mapping to GIS, essential elements of GIS, data acquisition and analysis, visualization of output, remotely sensed imagery and GIS, GIS functions and associated applications, and spatial decision support systems. This course will meet the needs not only of students who intend to do additional work in geographic techniques, but those who need only a one-semester survey of concepts.
Schedule type: Lecture, Web

CSTL 1213 — Water Treatment I **3 credit hours**
Lecture Hours: 3; Lab Hours:0 The material that will be covered in this program is presented to provide the student with an understanding of the basic operation and maintenance aspects of a water treatment plant, and solve operational and maintenance problems. This course also prepares students for the Mandatory Certification Examination if required.
Schedule type: Independent Study, Lecture, Web

CSTL 1223 — Water Production I **3 credit hours**
Lecture Hours: 3; Lab Hours: 0 The material that will be covered in this program is presented to provide the student with an understanding of the basic operation and maintenance aspects of a water production plant, and solve operational and maintenance problems. This course also prepares students for the Mandatory Certification Examination if required.
Schedule type: Independent Study, Lecture, Web

CSTL 1233 — Water Distribution I **3 credit hours**
Lecture Hours: 3; Lab Hours:0 The material that will be covered in this program is presented to provide the student with an understanding of the basic operation and maintenance aspects of a water distribution plant, and solve operational and maintenance problems. This course also prepares students for the Mandatory Certification Examination if required.
Schedule type: Independent Study, Lecture, Web

CSTL 1243 — Wastewater Treatment I **3 credit hours**
Lecture Hours: 3; Lab Hours:0 The content of this course will provide the student with the information needed to operate wastewater treatment plants as efficiently as possible, to understand the basic operational aspects of a plant, to analyze and solve operational problems. This course will prepare students for the Mandatory Certification Examination.
Schedule type: Independent Study, Lecture, Web

CSTL 1253 — Wastewater Collection I **3 credit hours**
Lecture Hours:3; Lab Hours:0 The content of this course will provide the student with the information needed to operate wastewater collection plants as efficiently as possible, to understand the basic operational aspects of a plant, to analyze and solve operational problems. This course will prepare students for the Mandatory Certification Examination.
Schedule type: Independent Study, Lecture, Web

CSTL 1311 — Surveying Lab **1 credit hour**
Lecture Hours: 0; Lab Hours: 1 The course consists of lab work with surveying instruments and the procedures used to conduct precise and accurate measurements with tapes, levels, theodolites and total stations.
Schedule type: Laboratory

CSTL 1313 — Surveying **3 credit hours**
Lecture Hours: 3; Lab Hours: 0 Practical surveying measurement techniques are presented with suitable office computation methods for boundary, construction, and topographic surveys. State coordinate systems are introduced with proper use of geodetic datums.
Schedule type: Lecture, Web

CSTL 2020 — Field & Research Methods **3 credit hours**
This course provides students with an understanding of how to evaluate, conduct, write and design research with an emphasis in environmental science. It introduces with the why, when and how quantitative and qualitative methods are used as investigative tools. The course follows the scientific method and focuses on how to search the literature, write a literature review, formulate research questions/hypotheses, and design experiments to test these hypotheses.
Pre-requisite(s): CSTL 1013, BIOL 2200

CSTL 2133 — Remote Sensing I **3 credit hours**
Lecture Hours: 3; Lab Hours: 0 A comprehensive introductory course that deals with fundamental physical principles of the science of remote sensing, the theory and practice of image interpretation, and information extraction techniques for aerial photos and satellite imagery. Includes remote sensing applications pertaining to management of natural resources and contemporary environmental issues. Practical exercises expose students to image processing and interpretation techniques.
Schedule type: Lecture, Web

CSTL 2142 — GIS Theories and Concepts **3 credit hours**
Lecture Hours: 3; Lab Hours: 0 Detailed lecture and lab-based examination of theories and concepts important to geographic information systems (GIS). Topics include GIS as a communication system, data acquisition and management, error management, GIS functions, GIS-based spatial analysis, GIS and regional scale, visualization concepts, and the role of GIS in spatial decision support.
Schedule type: Lecture, Web

CSTL 2143 — GIS Theories and Concepts **3 credit hours**
Lecture Hours: 3; Lab Hours: 0 Detailed lecture and lab-based examination of theories and concepts important to geographic information systems (GIS). Topics include GIS as a communication system, data acquisition and management, error management, GIS functions, GIS-based spatial analysis, GIS and regional scale, visualization concepts, the role of GIS in spatial decision support.
Pre-requisite(s): CSTL 1123
Schedule type: Lecture, Web

CSTL 2153 — Remote Sensing II **3 credit hours**
Lecture Hours: 3; Lab Hours: 0 This second course of remote sensing is focused on computational and applied aspects of remotely sensed digital satellite imagery. The course is designed to provide an understanding of digital image processing, analysis, and interpretation techniques. Topics covered in this course include radiometric correction, geometric correction, enhancement, manipulation, and information extraction techniques.
Pre-requisite(s): CSTL 2133
Schedule type: Lecture, Web

CSTL 2163 — Master Planning for Fed Fac **3 credit hours**
This course introduces the unique concepts and policies of Federal and Military Master Planning. Topics include Military Master Planning theory and principals, Mission-Based and Defensible Planning, the Federal Planning Process, Regional and Area Development Plan development for Federal and Military Facilities, Geospatial Analysis, and use of graphics. In addition, the course covers topics in Land Use and Environmental Planning and policy as it relates to Federal and Military facilities both throughout the Continental US and overseas. Though not a traditional service learning course, successful students may earn the opportunity of internships to work with the instructor's firm on Site Level and Comprehensive Military Master Planning projects.
Pre-requisite(s): CSTL 1123
Schedule type: Lecture

CSTL 2321 — Drone Surveying Lab **1 credit hour**
Lecture Hours:0; Lab Hours:1 The course consists of lab work with UAS and the procedures used to conduct aerial surveys.
Pre-requisite(s): CSTL 2323
Schedule type: Laboratory, Web

CSTL 2323 — Introduction to sUAS **3 credit hours**
Lecture Hours: 3; Lab Hours: 0 This course is designed to introduce students to properly and safely operating an sUAS in both a recreational and professional endeavor. The course will include training focused on aviation fundamentals that are required to pass the FAA part 107 exam.
Schedule type: Lecture

CSTL 2333 — Hydrographic Surveying **3 credit hours**
Lecture Hours: 3; Lab Hours: 0 This course covers the fundamentals of hydrographic surveys performed to measure the depth and bottom configuration of water bodies in support of nautical charting and other areas of marine geomatics, as well as marine construction, benthic habitat mapping, marine spatial planning, and bathymetric mapping of rivers and lakes.
Schedule type: Lecture

CSTL 2410 — Coastal Restoration **3 credit hours**
Coastal Restoration covers policy, project design, implementation, and management, with a focus on needs and policies specific to the Louisiana coastal zone. Students walk through a coastal restoration project from concept through the project life, and includes the use of tools and programs necessary to complete these tasks.
Pre-requisite(s): CSTL 1013, BIOL 2200
Schedule type: Lecture