MATH C291: MATHEMATICAL SCIENCES WORK BASED LEARNING

Item	Value
Curriculum Committee Approval Date	12/08/2023
Top Code	493200 - General Work Experience
Units	1 Total Units
Hours	54 Total Hours (Other Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)

Course Description

Course is designed to provide students with real-life experiences in Mathematical Sciences. On-campus work consists of instruction and experience in Math topics. Students complete research or projects that align with STEM fields in cooperation with an internship in which the student is employed, or serves as a volunteer, in a math-related setting (e.g., math teaching, tutoring, data collection and analysis) under the supervision of a qualified professional or faculty member. PREREQUISITE: Any college level mathematics course with a C or better or appropriate Math placement; Instructor permission required. COREQUISITE: Be employed or volunteer in a mathematics, statistics, or data-related setting for 54 hours over the course of the class. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Evaluate education and career pathways in STEM fields.
2. Develop math-related activities, such as new mathematical results or new approach or explanation of existing results, that may be used for professional publication or presentation.

Course Objectives

- 1. Use mathematical knowledge and skills in a STEM workplace setting.
- 2. Demonstrate the application of Math to a research project via a presentation or publication (slides, video, poster, paper, or device or product).

Lecture Content

APPROVED RESEARCH TOPIC IN COOPERATION WITH CORPORATE, NON-PROFIT, OR GOVERNMENT ORGANIZATION Background information research and/or protocol review Research question development Obtain results using analytical, data, simulation, or other method as appropriate Discussion of results PRESENTATION OF RESULTS Paper, poster, slides, video, or any appropriate communication method.

Method(s) of Instruction

- Work Experience (20)

Instructional Techniques

Research design and experimentation; presentation skill development; discussions with faculty mentor and professionals in related field

Reading Assignments

Literature review of topic; manuals.

Writing Assignments

Final presentation of product or research results

Out-of-class Assignments

Independent research through literature and protocol review; data collection in the field as needed

Demonstration of Critical Thinking

Finished product: theoretical or applied analysis, with presentation.

Required Writing, Problem Solving, Skills Demonstration

Research and analsyis: Presentation using slides / poster / paper/ video including demonstration of product and/or graphs of result; final report.

Eligible Disciplines

Mathematics: Masters degree in mathematics or applied mathematics OR bachelors degree in either of the above AND masters degree in statistics, physics, or mathematics education OR the equivalent. Masters degree required.

Other Resources

1. Any manuals, reference materials, job-site documents related to the successful completion of students job-oriented training. 2. Software documentation as needed. 3. Coastline Library