SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Geographic Information Systems Technician Program
Revision Date: August 21, 2023
Syllabus Statements

I.   CATALOG DESCRIPTION
Course Number: GIST 2190
Course Title: Spatial Programming and GIS
Prerequisite: GIST 1110
Catalog Description: The course provides an understanding of how to customize GIS software applications. Topics include the theory and implementation of the various scripting languages currently in use. Upon completion, students will be able to solve geospatial problems and streamline GIS workflows through the creation and modification of scripts.
Credit Hours: 3
Class Hours: 45
Lab Hours: 0
Total Contact Hours: 45

II.   COURSE OBJECTIVES: *Course will:*
A.   Introduce students to GIS programming.
B.   Demonstrate appropriate programming methods and functions.
C.   Discuss the functionality of GIS applications using scripting.
D.   Develop skills in GIS programming and scripting

III.   STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES
A.   Student Learning Outcomes: *Student will be able to*:
1.   Produce solutions to automate geoprocessing functions using a variety of programing methods, structures, and data sources.
2.   Use scripting language to modify and create geoprocessing scripts.
3.   Construct, Compile, and troubleshoot computer code according to best practices.
4.   Solve geospatial problems and streamline GIS workflows through the design and development of custom GIS applications.
5.   Modify user interfaces to increase productivity.
B.   General Education Learning Outcomes (GELOs)
1.   GELO 3: Critical Thinking & Problem Solving
Outcome 1: Collect, identify, interpret and analyze data

IV.   CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information*)
A.   Basics of geoprocessing and its languages
B.   GIS programming fundamentals
C.   Constructing and implementing code
D.   GIS modeling
E.   Customization of GIS interfaces
F.   Automating common GIS workflows
G.   Creating new scripts to perform analysis

V.   INSTRUCTIONAL MATERIALS
A.   Required Text(s): TBD
B.   Other Resources: Internet and computer access (Not a tablet or phone)

VI.   METHODS OF PRESENTATION/INSTRUCTION
   A.   Methods of presentation typically include a combination of the following:
      1.   Module overviews
      2.   Video presentations
      3.   Readings and resources

VII.   METHODS OF EVALUATION
   A.   Methods of evaluation typically include a combination of the following:
      1.   Assignments
      2.   Discussions
      3.   Projects
      4.   Quizzes/Exams