CREDITS AND CONTACT HOURS: Credit Hours: 3, Contact Hours: 45

COORDINATOR:
    Joe Crumpton

TEXTBOOKS:
    a. Supplemental Material: Handouts and website [www.mycourses.msstate.edu](http://www.mycourses.msstate.edu)

SPECIFIC COURSE INFORMATION:
    a. Catalog Description: Three hours lecture. Problem-solving methods, algorithm development, debugging and documentation in the C/Java/Fortran Programming language; applications. (Only one of 1213/1233/1273 recommended for students.)
    b. Prerequisites: MA 1313 or equivalent
    c. Required/Elective:
       Computer Science – Elective
       Software Engineering – Elective
       Computer Engineering – Elective

SPECIFIC GOALS OF THE COURSE:
    a. Specific Outcomes of Instruction:
       1. To introduce principles and practice of software development using the structured programming approach.
       2. To introduce develop the problem solving skills necessary to develop software solutions to problems.
       3. To develop knowledge of the data and control structures available in the structured programming paradigm and their appropriate uses.
    b. Criterion 3 Outcomes:
       The performance criteria in this class all address ABET-EAC outcomes c and e and ABET-CAC outcomes b and c.
       1. Demonstrate the ability to use flow control language constructs appropriately to solve a state problem.
       2. Demonstrate the ability to use single- and multi-dimensional arrays where appropriate to represent repetitive data.
       3. Demonstrate the ability to decompose problems into modules for solution.
4. Demonstrate the ability to pass information between modules in a program appropriately.
5. Demonstrate the ability to use standard built-in functions to perform simple tasks.

TOPICS COVERED: (Number of class hours)
1. Course introduction 2
2. Creating a program 2
3. Language conventions and rules 3
4. Data types and operators 4
5. Control flow, selection and iteration 6
6. Arrays (and pointers, when language-appropriate) 6
7. Functions and program structure 6
8. File I/O 3
9. The structure/record/object data type 3
10. Standard system functions 3
11. Debugging 2
12. Software development process 2
13. Exams 3