

METROPOLITAN STATE COLLEGE of DENVER
Office of Academic Affairs

REGULAR COURSE SYLLABUS

School of: Letters, Arts, and Sciences

Department: Mathematical and Computer Sciences

CIP Code: 11.0201

Prefix & Course Number: CSS 1510 Crosslisted With*:

Course Title: Computer Programming: FORTRAN

Check All That Apply: Required for Major: Required for Minor: Specified Elective:
Required for Concentration: Elective: X General Studies:

Credit Hours: 4 (4 + 0)

Total Contact Hours per semester (assuming 15-16 week semester):

Lecture 60 Lab 0 Internship 0 Practicum 0 Other (please specify type and hours): 0

Schedule Type(s): Lecture Grading Mode(s): Letter

Variable Topics Courses (list restrictions, including the maximum number of hours that can be earned**):
None

** NOTE: This information must be included in the course description.

Restrictions (Variable Topics Course): None

Prerequisite(s): MTH 1120 or MTH 1400, with a grade of "C" or better.

Corequisite(s):

Prerequisite(s) or Corequisite(s): NA

Banner Enforced:

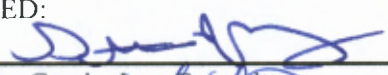

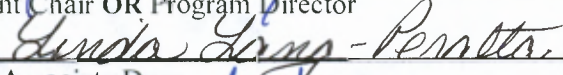
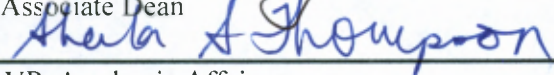
- Prerequisite(s):
- Corequisite(s):
- Prerequisite(s) or Corequisite(s):

Catalog Course Description: This is a first course in computer programming for students in mathematics, science, or engineering, using the FORTRAN language. It includes an introduction to computer applications, program design, testing and debugging.

Required Reading and Other Materials will be equivalent to:

Fortran 95/2003 for Scientists and Engineers, Steven J. Chapman, McGraw-Hill, 2007.

APPROVED:

	<u>1/29/10</u>
Department Curriculum Committee	Date
	<u>1/29/10</u>
Department Chair OR Program Director	Date
	<u>2/10/10</u>
Dean OR Associate Dean	Date
	<u>3/23/10</u>
Associate VP, Academic Affairs	Date

*If crosslisted, attach completed Course Crosslisting Agreement Form

Specific, Measurable Student Behavioral Learning Objectives

Upon completion of this course the student should be able to:

1. Run Fortran programs in a timesharing environment.
2. Recognize and write syntactically correct Fortran programs with statements involving the main elements of the language.
3. Design programs to solve elementary problems using topdown modular design.
4. Demonstrate the ability to modify algorithms for more difficult problems.
5. Use programming concepts including data types, arrays, input, output, conditional branching, loops and subprograms.

Detailed Outline of Course Content

- I. Introduction to Computers and the Fortran Language
- II. Basic Elements of Fortran
- III. Control Structures and Program Design
- IV. Basic I/O Concepts
- V. Arrays
- VI. Procedures and Structured Programming
- VII. More about Character Variables
- VIII. Additional Data Types
- IX. Advanced Features of Procedures and Modules
- X. Advanced I/O Concepts
- XI. Fortran Libraries

Evaluation of Student Performance:

As determined by the instructor:

1. Quizzes
2. Exams
3. Homework
4. Projects