

CATALOG INFORMATION

Dept and Nbr: MATH 38 Title: PASCAL PROGRAM-SCI
Full Title: Pascal Programming for Science
Last Reviewed: 6/28/2004

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	4.00	Lab Scheduled	0	17.5	Lab Scheduled	0
		Contact DHR	3.00		Contact DHR	52.50
		Contact Total	6.00		Contact Total	105.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 210.00

Title 5 Category: AA Degree Applicable
Grading: Grade Only
Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:
Formerly:

Catalog Description:
The solution of mathematical, scientific and engineering problems using the Pascal language. Emphasis on structured programming, including documentation, procedures, structured data types and pointer variables.

Prerequisites/Corequisites:
MATH 27 (formerly MATH 57) or MATH 58 or four years of high school college preparatory mathematics with qualifying placement score, and a previous computer programming course with grades of "C" or better.

Recommended Preparation:
Prerequisite courses taken within the last year. If a student's record shows a duplication of equivalent courses the most recent course must satisfy the prerequisite.

Limits on Enrollment:

Schedule of Classes Information:
Description: Programming in the Pascal language for math, science & engineering. (Grade Only)
Prerequisites/Corequisites: MATH 27 (formerly MATH 57) or MATH 58 or four years of high school college preparatory mathematics with qualifying placement score, and a previous

computer programming course with grades of "C" or better.

Recommended: Prerequisite courses taken within the last year. If a student's record shows a duplication of equivalent courses the most recent course must satisfy the prerequisite.

Limits on Enrollment:

Transfer Credit: CSU;UC.

Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area		Effective:	Inactive:
	B	Communication and Analytical Thinking	Fall 1981	Fall 2004
CSU GE:	Transfer Area		Effective:	Inactive:
	B4	Math/Quantitative Reasoning	Fall 1981	Fall 2004
IGETC:	Transfer Area		Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Fall 1981	Inactive: Fall 2004
UC Transfer:	Transferable	Effective:	Fall 1981	Inactive: Fall 2004

CID:

Certificate/Major Applicable:

Not Certificate/Major Applicable

COURSE CONTENT

Outcomes and Objectives:

To be successful, students should be able to:

1. Use structured programming (top down) techniques.
2. Use block structures, parameters and simple recursion to construct procedures and functions.
3. Use Pascal data types: including simple data types, defined scalar data types and structured data types (arrays, records, files & sets).
4. Use pointer variables: linked list, stack, queue and binary tree.
5. Write computer programs in Pascal to solve problems in mathematics and science. Program topics may be drawn from: algebraic and transcendental equation solutions, analytic geometry, statics, empirical probability simulation, and computations of numerical sequences and series.

Topics and Scope:

1. Preliminary Concepts.
Simple data type, assignment statement, I/O statements, control statements.
2. Procedures and Functions.
Block structure, parameters, simple recursion.
3. Building Quality Programs.
Documentation, structured programming, top down programming.
4. Additional Pascal Data Types.

- User defined scalar data types, structured data types including arrays, records, files, sets.
- 5. Pointer Variables.
Linked list, stack, queue, binary tree.
- 6. Problem Solving Using Methods Such As.
Simulation with random numbers, sorting, mathematical and scientific concepts.

Assignment:

1. The student will have daily outside reading, programming assignments, problem set assignments from required text(s), or instructor chosen supplementary materials.
2. Instructional methodology may include, but not limited to: lecture, demonstrations, oral recitation, discussion, supervised practice, independent study, outside project or other assignments.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.

Writing
0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Lab reports, Exams

Problem solving
50 - 75%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Performance exams

Skill Demonstrations
10 - 25%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice

Exams
5 - 25%

Other: Includes any assessment tools that do not logically fit into the above categories.

Writing Assignments

Other Category
0 - 15%

Representative Textbooks and Materials:

Text(s) required of each student will be selected by the department, a committee of the department, or the responsible instructor from the books currently available. Choices in the past have included:
Programming in Pascal by Dale; Heath Publishing, 1990.