JOLIET JUNIOR COLLEGE
DEPARTMENT OF COMPUTER INFORMATION AND OFFICE SYSTEMS

COURSE SYLLABUS

Course Prefix and Number	CIS 136
Course Title	PASCAL Programming
Curriculum	Computer Information Systems
Semester Hours	4
Lecture	4
Lab	0
Prerequisites	CIS 122 and Math 094 or equivalents, or consent of department

Catalog Description

The primary objectives of this course are twofold: to develop skills in analyzing and solving problems in their original context; and to become proficient in designing, coding, debugging and documenting programs in the Pascal programming language.

Course Objectives: See attached.

Prepared by:

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Dept. of CIOS

Revised 1/09
Revised 1/06
Revised 7/05
Revised 8/04
Revised 12/00
Revised 10/98
Revised 7/97
Revised 10/94
Revised 2/92
Revised 11/91

Reviewed by:

Ram Raghuraman
Department Chairperson Date

STUDENT MATERIALS

A. Textbooks:

Title: Fundamentals of Pascal

Author: Nance

Publisher: Southwestern

B. Other Required Materials

Flash drive

Other Course Requirements

There will be programming assignments corresponding to each of the topics.

Student Evaluation (Type of Grading)

Chapter tests, Programs, Homework, Class Assignments & Attendance are established by the individual instructor. A comprehensive final exam will be given.

Week/Days	Topic or Class Activity	Teaching Aids or Special Instruction
1	Computer Science Architecture; Problem Solving; Computer history; Hardware; Software.	
2	Program development; Data types: Variables, Input, Constants, Output, Standard functions.	
3	Modular program design; Procedures; Value / Variable Parameters; Functions; Scope of variables.	
4	Selection Statements; Boolean data types; Relational Operators: If / then, If / then / else, If / Else if, nested ifs, logical operands, case statement.	
5	Repetition Statements; Pretest loops: for loop, for down to loops, while loops; Posttest loops: repeat / until loops, nested loops.	
6	Text files; End of line; End of file; Creating a text file; Editing a text file, Reading a text file; Writing to a text file; Closing files; Enumerated types; Subranges; Operations on ordinal types.	
7	One dimensional arrays, array assignment; Using loops; Searching; Sorting; Arrays & Subprograms.	
8	Two-dimensional arrays; Reading and writing; Manipulating; Parallel arrays; Higher dimensional arrays; Processing strings.	
9	Records; Fields in a record; Array of records; With....Do; Nested records; Record variants.	
10	Dynamic Variables; Pointers; Linked lists; Manipulating linked lists; Other dynamic data structures.	
11	Recursion; Sorting Algorithms: insertion and quick.	
12	More about files; Creating & Accessing binary files; Retrieving file data; File Manipulation; Direct Access files.	
13	Graphic fundamentals; Graphic figures; Filling Patterns; Bar graphs & charts.	
14	Object Oriented Programming; Encapsulation; Inheritance; Using Objects; Implementation of Objects.	
15	Sets; Operations and relational operations.	
16	Review	
17	Final	

OBJECTIVES

At the completion of the this course, students will be able to:

1. Discuss computer history and the hardware and software that relates to the PASCAL language;
2. Operate a microcomputer for creating, compiling and executing their own PASCAL programs;
3. State and analyze a problem;
4. Pseudocode and code a problem in PASCAL, utilizing appropriate structured programming methods;
5. Document programs with both good internal and external documentation;
6. Create, manipulate, update and merge external files;
7. Utilize and create one- and two-dimensional arrays and arrays of records;
8. Search, manipulate and sort different array types;
9. Demonstrate appropriate subprogram modules by writing independent subprogram modules;
10. Demonstrate programming skills through coding a series of progressively more difficult problems;
11. Demonstrate knowledge of dynamic data structures by creating a linked list program;