



# BROWARD COMMUNITY COLLEGE COURSE OUTLINE

LAST REVIEW: 2003-04

NEXT REVIEW: 2008-09

STATUS: A

COURSE TITLE: CIW: Perl Fundamentals

COMMON COURSE NUMBER: CTS1853C

CREDIT HOURS: 3

CONTACT HOUR BREAKDOWN

*(per 16 week term)*

CLOCK HOURS:

*(Voc. Course ONLY)*

Lecture: 40

Lab: 8

Clinic:

Other:

PREREQUISITE(S): CGS 1601C

COREQUISITE(S):

PRE/COREQUISITE(S):

**COURSE DESCRIPTION:** *(600 characters, maximum)*

This CIW certification course teaches students how to fully utilize the Perl programming language. Students learn the Perl syntax, the basics of using regular expression, how to use Perl data types, and how to access and manipulate files. Students are also introduced to database connectivity and debugging techniques. This course, in combination with COP 1802C, prepares students for the CIW Web Languages certification exams.

## UNIT TITLES

- 1: Introduction to Perl
- 2: Flow Control
- 3: Regular Expressions
- 4: Arrays
- 5: Hashes
- 6: Subroutines
- 7: File I/O
- 8: Using the *stat* and *istat* Functions to Create Packages in Perl
- 9: Accessing Command Line Arguments and Environment Variables
- 10: Using Packages and Modules
- 11: Creating Packages in Perl
- 12: Database Connectivity
- 13: Debugging Perl



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## Course Outline CTS1853C

### I. Course Overview:

This course teaches students how to write programs using the Perl language. Beginning with topics as simple as variables and file I/O, students will develop skills of sufficient complexity to be able to develop custom packages and establish database connectivity with Perl.

### II. Units:

#### Unit 1: Introduction to Perl

##### General Outcome:

1.0 In this unit, students are introduced to the Perl programming language.

##### Specific Learning Outcomes:

Upon successful completion of this unit, students will be able to:

- 1.1 Define Perl
- 1.2 Discuss the history of Perl
- 1.3 Use basic Syntax
- 1.4 Use the *print* Function
- 1.5 Write a Simple Script
- 1.6 Define scalars
- 1.7 Manipulate numerical Data
- 1.8 Use Strings
- 1.9 Use Expression Operators
- 1.10 Perform Type Conversions
- 1.11 Retrieve Data From STDIN



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## Course Outline CTS1853C

### Unit 2: Flow Control

#### General Outcome:

2.0 In this unit, students learn how to use Perl's control structures.

#### Specific Learning Outcomes:

Upon successful completion of this unit, students will be able to:

- 2.1 Write Boolean Expressions
- 2.2 Use the if Statement
- 2.3 Use *for*, *while*, and *do while* Loop Statements
- 2.4 Explain Loop Labels
- 2.5 Use the *next*, *last*, *redo*, and *goto* Statements
- 2.6 Discuss the I/O Redirection Paradigm



### **Unit 3: Regular Expressions**

General Outcome:

3.0 In this unit, students learn to write and use regular expressions.

Specific Learning Outcomes:

Upon successful completion of this unit, students will be able to:

- 3.1 Use Pattern Matching
- 3.2 Write Simple Regular Expressions
- 3.3 Use Metacharacters
- 3.4 Use Character Classes
- 3.5 Explain Quantifiers
- 3.6 Explain Assertions
- 3.7 Use Substitution
- 3.8 Use the `=~` Operator
- 3.9 Use Parentheses as Backreferences
- 3.10 Use the *split* and *join* Functions



**Unit 4: Arrays**

General Outcome:

4.0 In this unit, students learn to use arrays in their Perl programs.

Specific Learning Outcomes:

Upon successful completion of this unit, students will be able to:

- 4.1 Use Arrays in Perl
- 4.2 Use Arrays with Loops
- 4.3 Access Array Elements
- 4.4 Use Lists
- 4.5 Use the *foreach* Loop
- 4.6 Use the *sort*, *push*, *pop*, *shift* and *unshift* functions
- 4.7 Use an Array as a Queue or a Stack



**Unit 5:Hashes**

General Outcome:

5.0 In this unit, students learn hashing.

Specific Learning Outcomes:

Upon successful completion of this unit, students will be able to:

- 5.1 Explain Hash Syntax
- 5.2 Use the *values*, *keys*, and *each* Functions
- 5.3 Use Hashes as Arrays



**Unit 6:Subroutines**

General Outcome:

6.0 In this unit, students learn how to write and use subroutines.

Specific Learning Outcomes:

Upon successful completion of this unit, students will be able to:

6.1 Define a Subroutine

6.2 Call a Subroutine Directly and Indirectly

6.3 Pass Values to a Subroutine

6.4 Pass References to a Subroutine

6.5 Explain Variable Scope

6.6 Explain Returning a Value



**Unit 7:File I/O**

General Outcome:

7.0 In this unit, students learn how to perform file I/O functions in Perl.

Specific Learning Outcomes:

Upon successful completion of this unit, students will be able to:

7.1 Describe a Filehandle

7.2 Use the *open* Function to Obtain Filehandle

7.3 Output Data to a File

7.4 Use the *close* Function

7.5 Open Files for Reading

7.6 Read Data From a File



**Unit 8: Using the *stat* and *istat* Functions to Create Packages in Perl**

General Outcome:

8.0 In this unit, students learn to the *stat* and *istat* functions.

Specific Learning Outcomes:

Upon successful completion of this unit, students will be able to:

8.1 Discuss Instance and Class Variables

8.2 Discuss Instance and Class Methods

8.3 Obtain information about a File



**Unit 9: Accessing Command Line Arguments and Environment Variables**

General Outcome:

- 9.0 In this unit, students learn to access command-line arguments and environment variables using Perl.

Specific Learning Outcomes:

Upon successful completion of this unit, students will be able to:

- 9.1 Describe Environment Variables
- 9.2 Access Environment Variables
- 9.3 Access Command Lines Arguments



**Unit 10: Using Packages and Modules**

General Outcome:

10.0 In this unit, students learn to use packages in Perl.

Specific Learning Outcomes:

Upon successful completion of this unit, students will be able to:

10.1 Use Modules

10.2 Create Objects

10.3 Call Methods



**Unit 11: Creating Packages in Perl**

General Outcome:

11.0 In this unit, students learn to create packages using Perl.

Specific Learning Outcomes:

Upon successful completion of this unit, students will be able to:

11.1 Discuss Instance and Class Variables

11.2 Discuss Instance and Class Methods



**Unit 12: Database Connectivity**

General Outcome:

12.0 In this unit, students learn to use Perl to establish a connection to a database.

Specific Learning Outcomes:

Upon successful completion of this unit, students will be able to:

- 12.1 Explain the Benefits of using Databases
- 12.2 Describe the Database Interface Module (DBI)
- 12.3 Use a Database Driver
- 12.4 Connect to a Database
- 12.5 Query a Database
- 12.6 Close the Connection
- 12.7 Describe the Structured Query Language (SQL)
- 12.8 Use the SQL SELECT Statement
- 12.9 Use the SQL INSERT Statement



**Unit 13: Debugging Perl**

General Outcome:

13.0 In this unit, students learn to debug Perl programs.

Specific Learning Outcomes:

Upon successful completion of this unit, students will be able to:

- 13.1 Use the -w Switch
- 13.2 Issue Commands to the Debugger
- 13.3 Trace Script Execution
- 13.4 Design Perl Scripts to Minimize Bugs
- 13.5 Use the strict Package