Course Title: Web Centric Computing
Course no: Csc-361 **Full Marks**: 70+10+20
Credit hours: 3 **Pass Marks**: 28+4+8

Nature of course: Theory (3 Hrs.) + Lab (3 Hrs.)

Course Synopsis: This course introduces the web data communication.

Goal: To provide the knowledge of Web Centric Computing Using Perl programming.

Course Contents:

Unit 1. Introduction **6 Hrs.**

Net programming, Introduction to Perl, Parsing rules, Variables and data, Statements and control structures, Subroutines, packages, and modules, Working with files, Data manipulation.

Unit 2. Complex Data Structure **4 Hrs.**

Accessing packed data structures, References, Complex Structures, Objects, Using tie.

Unit 3. Networking **5 Hrs.**

Obtaining network information, The socket module, Socket communication, Using IO Socket, Graham Barr's libnet bundle, Gisle Aas' LWP Bundle, Application of sytem.

Unit 4. Database Systems **4 Hrs.**

Text databases, DBM databases, Database file locking, Using the DBI and Win32 ODBC toolkits, SQL refresher.

Unit 5. Interprocessor Communication and Execution Enhancements **6 Hrs.**

Processes, Signals, Pipes, Executing additional processes, Other function calls, System V IPC, Perl on the command line, Perl environment variables, Perl in Perl, Threads, Security.

Unit 6. User Interface Tools **4 Hrs.**

Processing commands line arguments, Perl's reporting mechanism, Working with a terminal, Using Tk.

Unit 7. Developing World Wide Web **6 Hrs.**

HTML, Uniform resource locator, Web operation overview, The environment, The common gateway interface, Smarter web programming, The CGI module, Parsing HTML, Parsing XML, Debugging and testing CGI applications, Security.

Unit 8. Controlling, Extending and Embedding Perl 5 Hrs.

Warning, The strict Pragma, Other Perl Pragmas, Perl Internals, Perl's Internal Structures, Extending Perl, Embedding Perl, Cooperating with other languages.

Unit 9. Debugging, Tuning, Compiling, Documenting, and Distributing 5 Hrs.

Debugging techniques, Using a debugger, Traps for programmers of other languages, Optimization, Using dump, Using the compiler, Comparing script and executable speeds, Using the supplied documentation, Writing POD documentation, Converting POD to other formats, Function support, Perl makefiles.

Laboratory works: Exercises covering all features of above.

Text / Reference book:

1. The Complete Reference: Perl, Martin C. Brown, Tata McGraw-Hill Publishing Company Limited, 2001.

