MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act,1956

COURSE CONTENT

SCRIPTING LANGUAGES

B.Tech. III Year II Sem.CSE

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
24X0524	Foundation	3	0	3	3	40	60	100
Contact Classes: 45	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 45		

Prerequisites:

1. A course on "Computer Programming and Data Structures"
2. A course on "Object Oriented Programming Concepts"

Course Overview:

This course focuses on the concepts, evolution, and practical use of modern scripting languages, emphasizing Ruby, Perl, and TCL/Tk in software and web development. Students learn how scripting languages support rapid application development through automation, web integration, and graphical user interface design. The syllabus covers Ruby programming, web technologies, GUI creation, and language extension using C, followed by Perl scripting for text processing, system interaction, and Internet-based applications with attention to security concerns. The course also introduces TCL and Tk for event-driven programming, GUI development, and network-aware applications. Overall, the course equips learners with the ability to design, extend, and deploy efficient and secure scripting solutions across diverse computing environments.

Course Objectives

1. This course introduces the script programming paradigm
2. Introduces scripting languages such as Perl, Ruby and TCL.
3. Learning TCL Course Outcomes:
4. Comprehend the differences between typical scripting languages and typical system and application programming languages.
5. Gain knowledge of the strengths and weakness of Perl, TCL and Ruby; and select an appropriate language for solving a given problem.
6. Acquire programming skills in scripting language

Course Outcomes: After Completion of the Course, Students should be able to

1. Explain the principles of the scripting programming paradigm and its significance

in software development.
2. Describe the features and execution models of Perl, Ruby, and TCL scripting languages.
3. Differentiate between scripting languages and system/application programming languages based on their characteristics and use cases.
4. Analyze the strengths and limitations of Perl, Ruby, and TCL to select an appropriate language for a given problem.
5. Develop effective programs using scripting languages for automation, text processing, web, and GUI-based applications

UNIT-I Introduction: Ruby, Rails, The structure and Excution of Ruby Programs, Package Management with RUBYGEMS, Ruby and web: Writing CGI scripts, cookies, Choice of Webservers, SOAP and webservices. RubyTk – Simple Tk Application, widgets, Binding events, Canvas, scrolling

UNIT-II Extending Ruby: Ruby Objects in C, the Jukebox extension, Memory allocation, Ruby Type System, Embedding Ruby to Other Languages, Embedding a Ruby Interpreter

UNIT-III Introduction to PERL and Scripting : Scripts and Programs, Origin of Scripting, Scripting Today, Characteristics of Scripting Languages, Uses for Scripting Languages, Web Scripting, and the universe of Scripting Languages. PERL- Names and Values, Variables, Scalar Expressions, Control Structures, arrays, list, hashes, strings, pattern and regular expressions, subroutines.

UNIT-IV Advanced PERL: Finer points of looping, pack and unpack, filesystem, eval, data structures, packages, modules, objects, interfacing to the operating system, Creating Internet ware applications, Dirty Hands Internet Programming, security Isses.

UNIT-V : TCL Structure, syntax, Variables and Data in TCL, Control Flow, Data Structures, input/output, procedures, strings, patterns, files, Advance TCL- eval, source, exec and uplevel commands, Name spaces, trapping errors, event driven programs, making applications internet aware, Nuts and Bolts Internet Programming, Security Issues, C Interface.
Tk-Visual Tool Kits, Fundamental Concepts of Tk, Tk by example, Events and Binding, Perl-Tk.

TEXT BOOKS:

1. The World of Scripting Languages, David Barron,Wiley Publications.
2. Ruby Progamming language by David Flanagan and Yukihiro Matsumoto O'Reilly
3. "Programming Ruby" The PramaticProgammers guide by Dabve Thomas Second edition.

REFERENCE BOOKS:

1. Open Source Web Development with LAMP using Linux Apache, MySQL, Perl and PHP, J. Lee and B. Ware (Addison Wesley) Pearson Education.
2. Perl by Example, E. Quigley, Pearson Education.

3. Programming Perl, Larry Wall, T. Christiansen and J. Orwant, O'Reilly, SPD.
4. Tcl and the Tk Tool kit, Ousterhout, Pearson Education.
5. Perl Power, J. P. Flynt, Cengage Learning.

ELECTRONIC RESOURCES:

1. **https://www.ruby-lang.org/en/documentation**
2. **https://docs.ruby-lang.org/en/master/extension_rdoc.html**
3. **https://perldoc.perl.org/**
4. **https://perldoc.perl.org/perlmod**
5. **https://www.tcl-lang.org/doc/**

MATERIALS ONLINE:

1. Course template
2. Tutorial question bank
3. Tech talk and Concept Video topics
4. Open-ended experiments
5. Definitions and terminology
6. Assignments
7. Model question paper – I
8. Model question paper – II
9. Lecture notes
10. E-Learning Readiness Videos (ELRV)