MANNAR THIRUMALAI NAICKER COLLEGE

PASUMALAI, MADURAI – 625 004

(An Autonomous Institution affiliated to Madurai Kamaraj University)

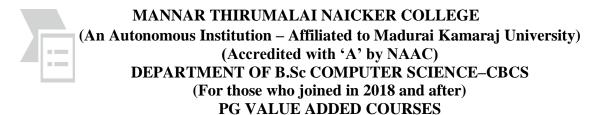Re-accredited with 'A' Grade by NAAC

VALUE ADDED COURSES

SYLLABUS

UNDER
CHOICE BASED CREDIT SYSTEM (CBCS)

VALUE ADDED COURSES

S. No.	Title of the paper	Total Hours
	PG	
1.	**SEARCH ENGINE OPTIMIZATION**	**30**
2.	**R PROGRAMIMING**	**30**
3.	**PC HARDWARE AND TROUBLE SHOOTING**	**30**
	UG	
4.	**DATA ANALYSIS USING MS-EXCEL**	**30**
5.	**WEB SCRIPTING**	**30**
6.	**DIGITAL MARKETING**	**30**

MANNAR THIRUMALAI NAICKER COLLEGE
(An Autonomous Institution – Affiliated to Madurai Kamaraj University)
(Accredited with 'A' by NAAC)
DEPARTMENT OF B.Sc COMPUTER SCIENCE–CBCS
(For those who joined in 2018 and after)
PG VALUE ADDED COURSES

SEARCH ENGINE OPTIMIZATION

After completion of the course student will be able to

CO1: Understanding SEO, working principle of Search Engines

CO2: Describe SEO Website ranking factors.

CO3: Identifying keywords for the website, utilizing keywords across the website.

CO4: Manage off-site SEO including link building

Unit I

Basics of SEO: What is Domain? – Basic knowledge of World Wide Web – Difference between Portal and Search Engines - Introduction to SEO: What is SEO? – Benefits of SEO – Challenges in SEO – Types of SEO Techniques - Black Hat SEO - White Hat SEO .or Spamdexing.

Unit II

Search Engines: Evolution of Search Engines – Search Engine Processes and Components - How Search Engine work? – Web Directories, Ranking in SEO: What is Search Engine Rank? – On-Page SEO – On-Site SEO – Off-Page SEO

Unit III

Challenges in SEO – Sitemaps: Types of Sitemaps – Creating a Sitemap. - Keyword Research and Strategy

Unit IV

Link Building: Important Factors for Link Building – Link-Building Resources and Utilities - Content Considerations: Content Consideration Factors and Subsequent Implementation

Unit V

Social Media Marketing and SEO - Mobile SEO Techniques

Text Book:

1. AravindShenoy, AnirudbPrabhu, "Introducing SEO – Your Quick-start guide to effective SEO practices" , Apress, 2016

Reference Book:

1. Eric Enge, "The Art of SEO – Mastering Search Engine Optimization", O Reilly, Second Edition.
2. Sean Odom, "SEO for 2016", Media Works Publishing, 2015

Web Reference:

1. www.tutorialpoint.com - E-book – Search Engine Optimization.
2. www.pdfdrive.com – SEO: Search Engine Optimization Bible

PG VALUE ADDED COURSES

R PROGRAMIMING

After completion of the course student will be able to

CO1 Understand the fundamental syntax of R through readings, practice exercises, demonstrations, and writing R code.

CO2 Apply critical programming language concepts such as data types, iteration, control structures, functions, and Boolean operators by writing R programs and through examples

CO3 Import a variety of data formats into R using R Studio

CO4 Prepare or tidy data's for in preparation for analysis.

Unit I

R – Overview – Basic Syntax – Data Types –Variables –Operators -Decision Making – Loops – Function - Strings

Unit II

Vectors -Lists – Matrices – Arrays – Factors – Data Frames - Packages – Data Reshaping – CSV Files

Unit III

Excel File – Binary Files – XML Files – JSON Files – Web Data – Databases – PIE Charts – Bar Charts - Boxplots

Unit IV

Histograms – Line Graphs – Scatterplots – Mean, Median & Mode – Linear Regression – Multiple Regression – Logistic Regression – Normal Distribution – Binomial Distribution

Unit V

Poisson Distribution – Analysis of Covariance – Time Series Analysis – Non Linear Least Square – Decision Tree – Random Forest – Survival Analysis – Chi Square Test

Web Reference:

1. http://www.tutorialspoint.com/r/r_tutorial.pdf

Reference Book:

1. Garrett Grolemund, "Hands-on programming with R", O'Reilly, 2014.

2. Pace, Larry, "Beginning R – Introduction to Statistical Programming", Apress

PG VALUE ADDED COURSE

PC HARDWARE AND TROUBLE SHOOTING

After completion of the course student will be able to

CO1 Recognize computer components & accessories.

CO2 Identify frozen computer screen repair.

CO3 Describe scanner and printer trouble shooting

CO4 Manage storage related problems

Unit I

BASIC HARDWARE CPU Essentials: The BUSses - Processor Modes - Modern CPU concepts: CISC vs. RISC CPUs - Circuit Size and Die Size - Processor Speed - Processor Cooling - System Clocks - Processor Packages - Architectural Performance Features.

Unit II

Memory: Essential memory concepts: Memory Organizational - Logical memory organization: Memory package - modules: Memory considerations - speed and wait – states - memory types - memory techniques - selection and installation of memory - getting the right amount - filling banks - Troubleshooting

Unit III

Motherboard: Components of Motherboards: Sockets and slots, Expansion slots - Memory slots - Chipsets - North bridge - South bridge - Form factor - Motherboard up-gradation - Considerations - Performing the Upgrade - Troubleshooting: Steps to identify whether to repair or replace the motherboard

Unit IV

Power supplies and power management: Switching regulation - Potential power problems: Recognizing the problems - Dealing with the power problems - Upgradation; Power management in windows O.S - Troubleshooting: switching power supplies - power management

Unit V

Storage devices: The hard drive: Construction - IDE drive standard and features - Troubleshooting: The CD-ROM drive - Basics of CD-ROM drive - Construction-Troubleshooting; The DVD drive: DVD media - The DVD drive and decoder - Troubleshooting; Blue-Ray disc drive: Physical Media - Software standards - Troubleshooting; Flash Memory drive: Essential components of flash drive - Size and style of packaging - Troubleshooting

Text Book

1. Computers Fundamentals and Architecture by B. Ram

2. William Stallings, Operating System, Pearson Education

3. Norton, Introduction to Computers, McGraw Hill

UG VALUE ADDED COURSE

DATA ANALYSIS USING MS-EXCEL

After completion of the course student will be able to

CO1 Indicate the names and functions of the Excel interface components.
CO2 Format& edit data and cells.
CO3 Construct formulas, including the use of built-in functions, and relative and absolute references.
CO4 Create charts and preview worksheets.

Unit I

Introduction to Excel: About Excel & Microsoft - Uses of Excel - Excel software - Spreadsheet window pane - Title Bar - Menu Bar - Standard Toolbar - Formatting Toolbar - the Ribbon - File Tab and Backstage View - Formula Bar - Workbook Window - Status Bar - Task Pane - Workbook & sheets
Columns & Rows :Selecting Columns & Rows - Changing Column Width & Row Height – Auto fitting Columns & Rows - Hiding/Unhiding Columns & Rows - Inserting & Deleting Columns & Rows - Cell - Address of a cell - Components of a cell – Format – value – formula - Use of paste and paste special

Unit II

Functionality Using Ranges: Using Ranges - Selecting Ranges - Entering Information Into a Range - Using AutoFill Creating Formulas. (4 hours) Using Formulas - Formula Functions – Sum - Average, if, Count, max, min, Proper, Upper, Lower, Using AutoSum.

Advance Formulas : Concatenate, Vlookup, Hlookup, Match, Countif, Text, Trim Spreadsheet Charts (4 hours) Creating Charts - Different types of chart, Formatting Chart Objects - Changing the Chart Type - Showing and Hiding the Legend - Showing and Hiding the Data

Unit III

Table Data Analysis : Sorting, Filter - Text to Column - Data Validation PivotTables - Creating PivotTables - Manipulating a PivotTable - Using the PivotTable Toolbar - Changing Data Field – Properties - Displaying a PivotChart - Setting PivotTable Options - Adding Subtotals to PivotTables

Unit IV

Spreadsheet Tools : Moving between Spreadsheets, Selecting Multiple Spreadsheets - Inserting and Deleting Spreadsheets Renaming Spreadsheets - Splitting the Screen - Freezing Panes - Copying and Pasting Data between Spreadsheets - Hiding - Protecting worksheets

Unit V:

Making Macros: Recording Macros - Running Macros - Deleting Macros

Text Book:

1. Microsoft Office Excel, Torben Lage Frandsen, www.Bookboon.com

UG VALUE ADDED COURSE

WEB SCRIPTING

After completion of the course student will be able to

CO1 Identify the appropriate programming environment for developing dynamic client-side and server-side web applications.

CO2 Plan, develop, debug, and implement interactive client-side and server-side web applications.

CO3 Identify the tools needed to create dynamic client-side and server-side web applications.

CO4 Students are able to develop a dynamic webpage by the use of VB script, Java script and HTML.

Unit I

World Wide Web – Web browsers – Markup Languages –Style Sheet technologies –client side, server side - HTML – Headings –Links -images- Lists- Tables- Forms- Frames- Cascading style sheets

Unit II

Introduction to` VBScript - Adding VBScript Code to an HTML Page -   VB Script Basics -

- VBScript Data Types - VBScript Variables - VBScript Constants - VBScript Operators – mathematical- comparison-logical –

Unit III

VBScript Conditional Statements -   Looping Through Code -   VBScript Procedures – type casting variables math functions –date functions – string functions –other functions - VBScript Coding Conventions - Dictionary Object in VBScript -   Err Object

Unit IV

JAVASCRIPT-Introduction – Simple program-Decision making -   Equality and Relational operators – Control statements – Functions – Programmer defined functions, JavaScript global functions, Recursion – Arrays – References and Reference parameters, Passing arrays to functions, Multidimensional arrays

Unit V

Objects of JavaScript: Window object –Document object –Forms object –Text boxes and text areas –Buttons , Radio buttons and Check boxes –Select object -other objects: Date object –Math Object –String Object –Arrays –worked examples.

Text Book

Hathleen Kalata, Internet Programming with VBScript and JavaScript, Thomson Learning

Mike McGrath-―Java Script‖-Dream Tech press, First Edition 2006

UG VALUE ADDED COURSE
DIGITAL MARKETING

CO1 Understanding the concepts of Digital Marketing , Google Ad words, and social media

CO2 Identifying the domains for digital marketing.

CO3 Analysis of social media and social network with respect to marketing

Unit I

Digital Marketing Fundamentals – Website Planning and Structure – Facebook Marketing for Business

Unit II

Google Adwords :Understanding Adwords Google Ad Types Pricing Models PPC Cost Formula Ad Page Rank Billing and Payments Adwords User Interface Keyword Planning Keywords Control Creating Ad Campaigns Creating Text Ads Creating Ad Groups Bidding Strategy for CPC Practical Examples

Unit III:

LinkedIN and Twitter Marketing-: Google Analytics and Webmaster Tool –Search Engine Optimization (SEO) –Affiliate Marketing & Google AdSense – Case Studies and Practical Assignments – Google Certification Program Training

Unit IV

Marketing v/s Sales Section -: Marketing Mix and 4 Ps –What is Digital Marketing? Inbound vs Outbound Marketing – Content Marketing – Understanding Traffic – Understanding Leads – Strategic Flow for Marketing Activities.

Unit V

PPC Advertising YouTube and Video Marketing E-mail Marketing for Business- Lead Generation & Marketing Automation- eCommerce and Payment Gateway –Remarketing Strategies – Advance Level- Google Plus for Business

Reference Books:

1. Ryan Deiss, Russ Henneberry, "Digital Marketing for Dummies", A Wiley Brand.
2. Ian Dodson, "The Art of Digital Marketing", Wiley
3. Calvin Jones and Damian Ryan. "Understanding Digital Marketing", Koganpage, IV Edition.