Programme Project Report (PPR)

for

Distance Learning Programme under School of Distance Education

Certificate in Internet Programming and Web Technologies

(CIPWT)

Course Co-ordinator: Pushpalatha. K. P

Academic support by

School of Computer Sciences

Mahatma Gandhi University

Kottayam, Kerala

Certificate in Internet Programming and Web Technologies

(Distance Learning Programme - Certificate Programme)

Programme Project Report

Mahatma Gandhi University started the School of Distance Education in 1989 with the vision of providing the opportunity for quality education to all realms of society. Since the beginning, thousands of students have availed themselves of this opportunity for higher education to a great extent throughout Kerala. Many students outside the State have also benefited from this. But after the new directions of the UGC in 2014, the University had stopped all the Off-Campus Centres of the School of Distance Education both inside and outside the State.

Now it is the new endeavour of the School to revamp its functioning by offering different types of Diploma and Certificate programmes very relevant to contemporary society, in addition to the conventional Graduate and Post Graduate programmes. This is being done with the academic and infrastructural support of the eminent Schools and Interdisciplinary Interuniversity Centres of the University. All these Schools/ Centres have already conducted similar Programmes or Post Graduate Programmes in the same area. This Certificate Programme has been designed by the School of Computer Sciences and to be conducted by the School of Distance Education with the academic support of the school.

School of Computer Sciences was established in the year 1990 with an objective to impart higher education and research in the field of Computer Science. The School enjoys considerable repute as a centre of learning, a reputation matched by a stimulating physical and intellectual atmosphere. Currently the School offers a second level M Sc programme in Computer Science, an M Tech in Computer Science and Technology with specialization in Communication and Network Technology, an M Phil programme in Computer Science and Ph D. The thrust areas of study and research includes Machine Learning and Pattern Recognition, Image Processing and Computer Graphics, Design and Analysis of Algorithms, Soft Computing, Data Mining, Big Data Analytics, Advanced and Wireless Networking, Internet programming, Cloud Computing and Advanced Computing Paradigms. The up to date curriculum and high standard of teaching matched with the state-of-the-art infrastructure and computational facilities of the School provide an intellectually stimulating atmosphere for the holistic development of students.

(a) Programme's Mission & Objectives:

To produce skilled and creative professionals in the area of Web technologies, enabling them to begin IT startups or to be absorbed by various organizations and to evolve innovative horizons of Internet Programming. The major objective is to improve the knowledge and technical skills in the area of Web Technologies by using education as a lifelong tool to acquire knowledge and training in internet applications.

(b) Relevance of the programme with HEI's Mission and Goals:

The programme is designed in such a way that, the learners coming from various streams, can achieve technical skills in different advanced and latest technologies in the area of web technologies in a professionally competing level. This enables them to engage in the IT-enabled departments or sections of many government and private sector organizations.

(c) Nature of prospective target group of learners:

The certificate programme is designed for a duration of 6 months. The learners of this programme are expected to come out as a professional in web technologies.

(d) Appropriateness of programme to be conducted in Open and Distance Learning mode to acquire specific skills and competence:

The programme enables the learners to achieve technical skills in developing web sites and web services. During this era of internet, all government and public sector organisations are run online, the programme can attract a lot of learners. The learners can become self employed by beginning IT start-Ups or be part of any organisation where the business are done online. This programme is completed within 6 months duration. 75 hours of contact classes will be given during holidays. The four courses of this programme instruct the learners to read and comprehend printed materials during non-contact hours and do practical assignments using laboratory of the School during the contact hours. Thus the syllabus shall be properly and systematically completed and examinations shall be completed within the 6 months period.

(e) Instructional Design:

The programme is of duration of 6 months which includes theory, practicals and project work. There are enough contact classes given to direct teaching and training. The assessment involves both internal and external components.

Course Code	Course Type	Course Name	Contact Hours	Credits	Internal Marks	External Marks	Total Marks
SDE SKS CP 1	Core course	Web Programming	10	3	20	80	100
SDE SKS CP 2	Core course	Object Oriented Programming Using Java	10	3	20	80	100
SDE SKS CP3	Core course	PHP and MySQL	10	3	20	80	100
SDE SKS CP4	Core course	Practical	90	3	20	80	100
SDE SKS CP4	Core course	Project	4	4	20	80	100
Total			**124**	**16**	**100**	**400**	**500**

(f) Procedure for admissions, curriculum transaction and evaluation:

The Certificate programme with a duration of 6 months, is designed to technically professionalize the learners including youth and old, employed and unemployed. The admission procedure of this programme is based on the following eligibility criteria:

A pass in 10+2 level examination.

All the courses are evaluated based on assignments/internal/external evaluation. For Project work, the learners have to complete a mini project work along with the three theory courses, according to curriculum and submit a project report and the evaluation is done based on project presentation and viva-voce.

(ii) Detailed syllabi: Annexure I

Admission to the programme will be done by the University through a common procedure for all the programmes under the School of Distance Education. Fee structure will be decided by

the University. The School will prepare an academic calendar/activity planner and will be circulated among all the learners at the time of admission itself. The academic calendar will include all the significant activities, important dates, schedule of submission of assignments, schedule of contact classes, schedule of examinations, etc.

Evaluation of the courses shall be done by the faculty themselves on the basis of internal assessment and end semester examinations. 20% of the marks will be decided by the internal evaluations and the remaining 80% by the end semester examinations which will be done by the University. The performance of a student in each course is evaluated in terms of percentage of marks with a provision for conversion to grade points.

Each student shall be required to do one Assignment/Book Review/Debate/Seminar/ Presentation of case study for each course. Assignments/Book Review after valuation shall be returned to the students. The teacher shall define the expected quality of the above in terms of structure, content, presentation and the like, and inform the same to the students.

Grading System will be followed for the evaluation on a ten point scale. The details of the grading system are given in the following Table.

Percentage Equivalence of Grade:

Range of % of Marks	**Grade Letter**	**Performance**	**Grade Point**
95 - ≤ 100	O	Outstanding	10
85 - < 95	A plus	Excellent	9
75 - < 85	A only	Very Good	8
65 - < 75	B plus	Good	7
55 - < 65	B only	Above Average	6
45 - < 55	C	Average	5
40 - < 45	P	Pass	4
< 40	F	Fail	0
Absent	Ab	Absent	0

'P' grade is required for a minimum pass in a course. The minimum GPA required for a pass in the Diploma programme is 4.

Calculation of Grade Point Average (GPA) :

Credit Points for the Course = (No. of Credits assigned for the course **x** Grade Point secured for that course).

GPA indicates the performance of a student in the programme. GPA is based on the total **credit points** earned by a student in all the courses divided by the total number of credits assigned to the courses required in the programme.

Note: GPA is computed only if the candidate passes in all the required courses (gets a minimum required grade for a pass in all the required courses as per the curriculum).

GPA =

Total credit points earned by the student from all the required courses of the programme
Total credits of all courses required in the programme

This formula shall be printed on the Grade Card issued to the student with a note that it could be used to convert the grades into mark-percentages. (The details of the grading system as indicated above shall also be printed on the Grade Card).

Conversion of GPA to Grade

GPA	Grade
10	O
9.0 - < 10	A plus
8.0 - < 9	A only
7.0 - < 8	B plus
6.0 - < 7	B only
5.0 - < 6	C
4.0 - < 5	P
< 4	F
Absent	Ab

Conversion of GPA to percentage
Equivalent Percentage = (GPA obtained) X 10

(g) Requirement of the laboratory support and Library Resources:

The necessary software and the hardware support for the programme will be provided by the School. Library facilities of the School and University will be provided as per requirements.

Mahatma Gandhi University Library and Information System consists of University Library, libraries of the Schools and 4 study centre Libraries. The University Library was established in 1989. The University Library which is situated in the main campus occupies purpose-built accommodation, and provides a variety of facilities and has a user-friendly environment. These include individual work spaces, room for group study and teaching, audio-visual access and online information retrieval system. The building of the University Library is 2000 sq.m in area consisting of the cellar, the ground floor and the first floor.

Academic as well as public users are given the facility to use the library. Special category membership is provided to journalists. The library is providing service from 8 am to 8 pm in three shift timings for its staff. The library functions on an average of 345 days in a year. The libraries of teaching departments are open during working hours of the Schools. Reading space is provided in all the three floors housing the various sections of the library. The library provides

reading facility to the visually impaired users too. For this, an electronic lab custom made for visually and physically challenged users has been set up during 2016.

The University Library has a Library Advisory Committee. It is an 18 member committee with Vice-Chancellor as Chairman and University Librarian as Convener.

The library has a collection of 59,000 books, 232 journals, 2,135 Ph.D. theses and has access to 15000+ e-journals under E-Shodh Sindhu. The activities of the Library are comprehensively automated using open source library management software KOHA. OPAC, Journal Article Index, By monthly Bibliography compilation and Literature Search Service are also available

The library is a member of the INFLIBNET Centre, Ahmedabad as well as DELNET (Developing Library Network). As a member of these networks, the library provides access to the resources of other major libraries in the country. In addition to the access to UGC INFONET consortium, it has access to major online databases, such as EBSCO, ProQuest dissertations and theses, Oxford Scholarship Online, IEEE All Society Periodicals Package etc. Mahatma Gandhi University had won the State IT Award during the year 2009 in the e-learning category for its university online theses digital library. The various department libraries have a good collection of subject specific books and journals.

A. MAHATMA GANDHI UNIVERSITY LIBRARY	
Category	**No.**
Books	59000
Journals	232
Bound Journals	7500
Ph.D Theses	2135
E-Journals (in UGC-Infonet, renamed as E-ShodhSindhu)	15000
Online databases (in UGC Infonet)	11
Online Archives subscribed	185 Titles
Online databases subscribed	4
E-books	7338
DVDs: Educational Videos	293

B	**Name of School/Centre**	**Total No. of books**
	School of Computer Sciences	4130

(h) Cost estimate of the programme and the provisions:

The budget details for the course is given in the following Table.

S. No.	Item	Amount (Lakhs)
1	Manpower	3
2	Study Materials	2
3	Examinations	1.5
4	Laboratory/ Library	1.5
	TOTAL	**8 Lakhs**

Total Programme fee: Rs.8000/-

(i) Quality assurance mechanism and expected programme outcomes:

The quality of the programme will be ensured through strict monitoring by an executive committee including the Co-ordinator of the programme, the subject experts, Director, School of Distance Education and Head of the School of Computer Sciences. The Co-ordinator of the programme shall ensure the regular student feedback of courses, teachers and programme in the prescribed format towards the end of the semester and the same shall be analysed to draw conclusions for effecting improvement. Periodical review meetings on the programme efficacy will be held in which the remarks of teachers on curriculum, syllabi and methods of teaching and evaluation will be given due importance. Moreover, the progress and the quality of the programme will be monitored by the Internal Quality Assurance Cell of the University from the outcome and feedback of the learners as well as the proper documentation maintained in the Centre.

Annexure I

1. SDE SKS CP 1 Web Programming

Unit I

HTML: General Introduction to Internet and WWW; Text tags; Graphics, Video and Sound Tags; Link and Anchor Tags; Table Tags; Frame Tags; Miscellaneous tags (layers, image maps etc.); CSS; DHTML; Example Applications; Simple introduction to XML and VRML.

Unit II

CGI Programming: HTML Forms and Fields; Perl: Basic control structures, Data types and basic features; CGI Programs: GET & POST methods, Simple applications; Cookies; Server side includes; Example applications.

Unit III

Javascript: Basic data types; Control structures; Standard functions; Arrays and objects, Event driven programming in Javascript; Example applications, **Introduction to AJAX, Introduction to JQUERY, Crystal reports.**

Unit IV

Tools for dynamic webpages: Dream viewer, Macromedia flash, Zope, HTML5.

Unit V

Server side scripting; Serveletstructure; Serveletlife cycle; Request and response objects; Sessions; Invoking servelets, JDBC, .NET Technology; C#, JSP ,ASP,PHP

References

- Joel Sklar, Principles of Web Design, Vikas Publications, 2014.
- V.K. Jain, Advanced Programming in Web Design, Cyber Tech Publications, 2008.
- H M Deitel, P J Deitel&A B Goldberg, Internet and Worldwide web programming: How to Program, 3/e, Pearson Education, 2007.

2. SDE SKS CP 2 Object Oriented Programming Using Java

Unit I

Brief History of Java, Special Features of Java, C++ Vs JAVA,JAVA and Internet and WWW, JAVA support systems, JAVA environment. JAVA program structure, Tokens, Statements, JAVA virtual machine, Constant &variables, Data types, Declaration of Variables, Scope of variables, Symbolic constants, Type casting. Operators : Arithmetic, Relational, Logical assignments, Increment and decrement, Conditional, Bitwise, Special, Expressions & its evaluation. If statement, if...else... statement, Nesting of if...else... statements, else...if Ladder, Switch, ?operators, Loops –While, Do, For, Jumps in loops, Labelled loops.

Unit II

Defining a class, Adding variables and methods, Creating objects, Accessing class members, Constructors, Methods overloading, Static members, Nesting of methods. Inheritance: Extending a Class, Overriding methods, Final variables and methods, Final classes, Finalize methods, Abstract methods and classes, Visibility control.

Unit III

Arrays: One dimensional & two dimensional, Strings, Vectors, Wrapper Classes, Defining interface, Extending interface, Implementing interface, Accessing interface Variable, System packages, Using system package, Adding a class to a package, Hiding classes.

Unit IV

Creating threads, Extending the threads class, Stopping and blocking a thread, Life cycle of a thread, Using thread methods, Thread exceptions, Thread priority, Synchronization, Implementing the runnable interface.

Unit V

Local and rmoteapplets Vsapplications, Writing applets, Applets life cycle, Creating an executable Applet, Designing a Web page, Applet tag, Adding applet to HTML file, Running the applet, Passing parameters to applets, Aligning the display, HTML tags &applets, Getting input from the user, JDBC.

References

- E.Balaguruswamy,"Programing with java - a primer" ,Mcgraw Hill Education, 2014.
- Herbert Schildt, Java: The Complete Reference, Seventh Edition,2007.
- Peter Norton, "Peter Norton Guide To Java Programming", Techmedia Publications, 1997.

- Walter Savitch, "Java: An Introduction to Problem Solving and Programming", Pearson Education, 7th Edition, 2015.
- Bruce Eckel , "Thinking in Java", Pearson Education, 4th Edition, 2006.

3. SDE SKS CP 3 PHP and MySQL

Unit I

Overview: Introduction to PHP, Handling html form with PHP, Decisions and loop, Function, String, Array, Regular expression, Configuring and installation-Apache and PHP, MySQl.

Unit II

Creating PHP page: Structure and syntax- Constant, Variable, <? PHP tag, Session and cookie-Setting cookies with PHP, Using cookies with sessions, Deleting cookies, Registering session variables, Working with file and directories.

Unit III

Using PHP with MySQL: MySQL structure, Connection with MySql Database, Performing basic database operations (DML) (Insert, Delete, Update, Select), Using table, User input and output, User edit the database.

Unit IV

Manipulation and Creation: Manipulating and creating images with PHP, Validation, handling and avoiding errors.

Unit V:

Advanced Techniques: PHP5, LAMP, WAMP, sample projects- create login pages, creating Entry form, connecting to MySQL.

References

- Larry Ullman , PHP and MySQL for dynamic Web sites, Pearson, 4th tedition, 2012
- Steven M.Schafar, HTML, CSS,javascript, perl, python&PHP, Wiley Publication,2005
- ElizebethNaramrore, JaisonGarner, Beginning PHP5, Apache and MySQL @development, Wiley publication, 2006.