ALAGAPPA UNIVERSITY

(A State University Accredited with A+ Grade By NAAC(CGPA:3.64) in the Third Cycle and Graded as Category-I University By MHRD-UGC)
Karaikudi – 630003.
Tamilnadu

Directorate of Distance Education

PROGRAMME PROJECT REPORT

Certificate Course

in

Computer Fundamentals

Submitted for seeking approval to introduce programme through Distance Education Mode

July 2020

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DIRECTORATE OF DISTANCE EDUCATION

CERTIFICATE COURSE IN COMPUTER FUNDAMENTALS

Credit Based Curriculum and Evaluation System

(With effect from Academic Year 2020 - 2021 Onwards)

(a) PROGRAMME'S MISSION AND OBJECTIVES

Mission

Mission is to impart employability and creativity to the students and lives up to the standards of Computer science, Computer Applications and Information Technology (IT) industry.

Programme Objectives

The goal of the computer science curriculum is to provide students with the knowledge and tools that will allow them to design and implement effective, economical, and creative solutions for the needs of individuals, society, and the high-tech economy.

(b) PROGRAMME OUTCOME

At the end of this programme, the student will be able to;

- Compare and contrast various types of computers
- Explain the purpose of CPU and how it works
- Describe how information is stored in memory
- Know about various types of software's and its applications

(c) NATURE OF PROSPECTIVE TARGET GROUP OF LEARNERS

The nature of prospective target group of learners is students from schools, Housewife's and college students from various discipline like Commerce, Mathematics, Physics, Chemistry, Biology, Electronics, and Engineering etc. It also includes the learners who want to become entrepreneurs like Web Designers, Web design instructor, Website Programmer, e-commerce site developer and web master, Software Developers, BPO's, KPO's etc.,

d) APPROPRIATENESS OF PROGRAMME TO BE CONDUCTED IN DISTANCE LEARNING MODE TO ACQUIRE SPECIFIC SKILLS AND COMPETENCE;

Certificate in computer fundamentals Programme through Distance Learning mode is developed in order to give subject-specific skills including i) fundamentals of computers ii) Knowledge about various kinds of applications software like worksheet, word document and presentation software.

(E) INSTRUCTIONAL DESIGN

e.1 Revisions of Regulation and Curriculum Design

1. The University reserves the right to amend or change the regulations, schemes of examinations and syllabi from time to time based on recent market dynamics, industrial developments, research and feedback from stakeholders and learners.
2. Each student should secure 8 credits to complete certificate programme.
3. Each theory and practical course carry 2 credits with 75 marks in the University End Semester Examination (ESE) and 25 marks in the Continuous Internal Assessment (CIA).

Programme code :

Certificate course in Computer fundamentals	223

Course of Study and Scheme of Examinations

S.No	Course code	Name of the Course	CIA Marks Max.	ESE Marks Max.	Total Marks Max.	Credits
1	22311	Computer fundamentals	25	75	100	2
2	22312	Digital Logic Fundamentals	25	75	100	2
3	22313	Application Programs	25	75	100	2
4	22314	Application Programs Lab	25	75	100	2
TOTAL			**100**	**300**	**400**	**8**

CIA : Continuous Internal Assessment ESE : End semester Examination

Course Code Legend:

2	2	3	S	C

223 – Programme code for Certificate Course in Computer fundamentals
S -- Semester Number
C – Course Number in the Semester

e.2 Detailed Syllabi

The detailed Syllabi of study and shall be as shown in Appendix.

e.3 Duration of the Programme:

The certificate programme shall consist of a period of six months (One Semester). Maximum duration to complete the course is 2 Years.

e.3.1 Medium of Instruction

The medium of instruction is only in **English**.
The course material is also in **English.**

e.4 Faculty and Support Staff Requirements:

The following faculty and support staff are required for this programme.

S.No	Staff Category	Numbers
1	Core Faculty	2
2	Lab Assistant	1
3	Clerical Assistant	1

e.5 Instructional Delivery mechanisms

The instructional delivery mechanisms of the programme includes SLM- Study materials, Lab instruction manual, Personal contact session for both theory and practical courses of the programme, e-version of the course materials in the form of e-book, e-tutorials, Power Point, Video Lecture Links, Video Lectures, Open Educational Resources(OER) and Virtual lab.

e.6 Identification of media

The printed version of SLM – study material shall be given to the learners in addition to MOOC, e-tutorial and virtual lab.

e.7 Student Support Services

The student support services will be facilitated by the Directorate of Distance Education, Alagappa University, Karaikudi and its approved learning centres located in various parts of Tamilnadu.

The pre-admission student support services like counseling about the programme including curriculum design, mode of delivery, fee structure and evaluation methods will be explained by the staff at Directorate of Distance Education or Learning centres.

The post-admission student support services like issuing Identity card, study materials will be provided thru Directorate or Learning centres. The face to face contact sessions of the programme for both theory and practical's will be held at the Directorate or Learning centres.

The student support regarding the conduct of examinations, evaluations, publication of results and certificates are done by Office of the Controller of Examinations, Alagappa University, Karaikudi.

F. PROCEDURE FOR ADMISSION:

f.1 Minimum qualification for admission

Candidates for admission to the certificate programme shall be required to have passed HSc or (10+2/10+3) of any Recognized institution or authority accepted by the Syndicate of the Alagappa University as equivalent thereto shall be eligible.

f.2 Curriculum transaction

- The face to face contact sessions in class room teaching with the support of SLM, Power Point Presentations, web-based tools, audio and animated videos.
- The practical classes are based on the respective subject study materials containing requirement for the laboratory experiments.
- Face to face contact sessions will be conducted for both theory and practical courses in the following manner.

Course Type	**PCP (in Hours)**
Theory courses (3 Courses – 6 Hrs/course)	18
Practical course (1 Course – 60 Hrs/course	60
Total	**78**

f.3 Evaluation

There shall be two types of evaluation systems; internal assessment and end semester examination will be conducted by the University according to the following scheme. The maximum marks for the internal assessment for both theory and practical's is 25 marks. The maximum marks for end semester examination is 75 marks for each course. The candidate failing in any course(s) will be permitted to appear for each failed course(s) in the subsequent examination. Candidates who have passed the examination in all prescribed courses as per the above regulations shall be eligible for the award of the programme.

Internal assessment

- Internal assessment of theory courses is through home assignment with workbook, case studies, review questions, quiz, multiple choice questions etc., for 25 marks.
- The internal assessment for the practical courses shall be through home assignment which includes workbook designing algorithm, preparing source code, PL/SQL coding etc., for 25 marks.
- Student should submit assignment for theory and practical courses of every course.

Division of Internal Marks (Assignment)

Theory		**Practical**	
Assignment	**Marks**	**Assignment**	**Marks**
Class test/Review questions Workbook, case studies, quiz, multiple choice questions	25	Model practical, Web Design Workbook for preparing source code, results	25

End Semester Examination (ESE)

The university end Semester Examinations shall be of three hours duration with maximum of 75 Marks for both theory and practical courses.

f.3.1 Minimum for a pass:

To pass in each course, a candidate is required to secure 40% marks in the End Semester Examination and 40% marks in the aggregate (marks in End Semester Examination + marks in Internal Assessment).

The student who does not secure required minimum marks for pass in a course(s) shall be required to reappear and pass the same in the subsequent examination.

f.3.2 Question Paper Pattern - Theory

The end semester examination will be conducted in the duration of 3 Hours and maximum of 75 Marks.

All the units should be covered in each Part

Part – A (10 x 2 Marks: 20 Marks) Answer all questions

Part – B (5 x 5 Marks: 25 Marks) Answer all questions choosing either (a) or (b)

Part – C (3 x 10 Marks: 30 Marks) (Answer any 3 out of 5 questions)

End Semester Examination (ESE) - Practical

Students are required to prepare a separate lab record for each lab course. The practical counsellor should duly sign this lab record after each session.

Students shall prepare practical record note book which includes aim, algorithm, source code, input, expected output and result of the experiment and submit during end semester practical examination.

Division of marks in ESE – Practical (Maximum 75 marks)

The end semester practical examination will be conducted in the duration of 3 Hours and maximum of 75 Marks.

Practical details	Max. Marks
Algorithm / Flowchart	10
Source Code	20
Debugging	10
Execution	10
Results	10
Viva-Voce	5
Record	10
Total	75

f.3.3 Procedure for Completing the Course:

The candidate will qualify for the certificate programme only if he/she passes all the (including arrears) courses with in a period of TWO years from the date of admission.

f.3.4 Results:

Results will be declared at the end of each semester of the University examination and the marks/grade obtained by the candidate will be forwarded to them by the Controller of Examinations, Alagappa University.

f.4 Fees Structure:

Fee Particulars	Rs.
Admission Processing Fees	100
Course Fees	2700
ICT fees	150
Total Fees	**2950**

The above mentioned fees structure is exclusive of examination fees.

G. REQUIREMENT OF THE LABORATORY SUPPORT AND LIBRARY RESOURCES

g.1 Laboratory Support

A well- equipment Computer Laboratory was established in the Alagappa University, Karaikudi with necessary software's as per the practical's syllabi for conducting face to face contact sessions for practical courses of this programme. Model Practical Questions is available to the learners in the university website.

g.2 Library Resources

The Directorate of Distance Education, Alagappa University provides library facility with number of books and Self Learning materials for Computer Science Programmes. The Central library of Alagappa University provides the collection of volumes of Self Learning Materials, Printed books, Subscriptions to printed periodicals and Non-book materials in print form for the learner's references. All these library resources are meant for learner's reference purpose only.

h)Cost estimate of the programme and the provisions:

Expense details	Amount in (Rs.) Approx.
Programme development (Single time Investment)	20,00,000/-
Programme delivery (per year)	24,00,000/-
Programme maintenance (per year)	5,00,000/-

(i) Quality assurance mechanism and expected programme outcomes:

i.1 University's Moto:

' Excellence in Action'

i.2 University's Vision and Mission

Vision

Achieving Excellence in all spheres of Education, with particular emphasis on ' PEARL' - Pedagogy, Extension, Administration, Research and Learning.

Mission

Affording a High-Quality Higher Education to the learners so that they are transformed into intellectually competent human resources that will help in the uplift of the nation to Educational, Social, Technological, Environmental and Economic Magnificence (ESTEEM).

i.3 University Objectives

1. Providing for instructions and training in such branches of Learning at the university may determine.
2. Fostering Research for the Advancement and Dissemination of Knowledge and Application.

i.4 Quality Policy

Attaining Benchmark Quality in every domain of 'PEARL' to assure Stakeholder Delight through Professionalism exhibited in terms of strong purpose, sincere efforts, steadfast direction and skillful execution.

i.5 Quality Quote

Quality Unleashes Opportunities Towards Excellence (QUOTE).

i.6. Course benchmarks

The benchmark qualities of the programme may be reviewed based on the performance of students in their end semester examinations and number of enrolments of students. Feedback from the alumni, students, parents, stakeholders and employers will be received to analyze the benchmark qualities for the further improvement of the programme.

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Appendix

Detailed Syllabi

22311 COMPUTER FUNDAMENTALS

Course Objectives

This course will introduce you to the field of computer science and the fundamentals of computer programming. It is specifically designed for students with no prior programming experience, and touches upon a variety of fundamental topics. The goal of the computer science curriculum is to provide students with the knowledge and tools that will allow them to design and implement effective, economical, and creative solutions for the needs of individuals, society, and the high-tech economy.

Course Outcome

At the end of this course, the student will be able to;

- Compare and contrast various types of computers
- Explain the purpose of CPU and how it works
- Describe how information is stored in memory
- Know about various types of software's and its applications

UNIT I

Introduction to Computers, History of computers, Types of computers, Characteristics of computers, Basic Anatomy of a computer, Applications of computer.

UNIT II

Input and Output devices - Introduction – inputting text: keyboards, OCR, Bard codes and speech recognition - Inputting graphics- scanners – pointing devices

UNIT III

Output devices – types of screens- CRT- flat panel displays, Printers - Laser Printers, Ink-jet printers - other printers – color printers.

UNIT IV

Memory and Types: Memory types – Main Memory - RAM, ROM, Types of ROMs - PROM, EPROM, EEPROM, Cache memory, virtual memory, buffers.

Unit V

Secondary storage - Diskettes - Hard Disks - Optical Disks - Magnetic Tapes – External Hard Disks, USB Flash Drive.

UNIT VI

Software- Kinds of Software - The five types of Applications software - Word processing – Spreadsheets - Database software, Presentation graphics software - Communications software- System Software – Operating system - functions.

References:

1. Dennis P.Curtin, Kim dolwy, KunL AWN, Xrhleen morin, Information Technology, the breaking wave, TMH 2000.
2. Sanjay saxena, A First Course in Computers (Based on Windows Xp and Office Xp) Vikas Publishing House; Second edition (2010).

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22312 DIGITAL LOGIC FUNDAMENTALS

Course Objectives:

To impart the knowledge in the field of digital logic fundamentals
To impart knowledge about the various components of a computer and its internals.

Course Outcome:

After the completion of this course, the student will be able to :

- Basic principles of number system
- Concepts of digital, Boolean and instruction
- Design and realize the functionality of the computer hardware with basic gates and other components using combinational and sequential logic.

Unit I:

Number Systems: Binary, Octal, Decimal and Hexadecimal number systems – Conversion from one base to another base – Use of complements – binary arithmetic – Numeric and Character codes.

Unit II:

Boolean algebra and Combinational Circuits: Fundamental concepts of Boolean Algebra – DeMorgan's theorems.

Unit III:

Simplification of expressions – Sum of products and products of sums – Karnaugh map simplification – Quine - McKluskey method – two level implementation of Combinational Circuits.

Unit IV:

Combinational Circuits: Half Adder – Full Adder – Subtractors – Decoders – Encoders – Multiplexers – Demultiplexer.

Unit V:

Sequential Circuits: Flip flops – Registers – Shift Registers – Binary Counters – BCD Counters – Memory Unit.

Unit VI:

Data Representation : Data Types – Complements – Fixed Point Representations – Floating Point Representations – Other Binary Codes – Error detection codes.

Reference Books:

1. Digital Computer Fundamentals, 6th Edition, Thomas C. Bartee, Tata McGraw Hill, 2008.
2. Digital Logic and Computer Design, M. Morris Mano, Pearson Education, 2008.
3. Digital fundamentals, Floyd & Jain, eighth edition, 2005, Pearson Education.
4. Digital Principles and applications, Donald P leach, Albert Paul Malvino, Goutam saha, Sixth edition, Tata McGraw Hill,2006.

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22313 APPLICATION PROGRAMS

Objective of the Course:

- To help the students to understand how to format, edit, and print text documents and prepare for desktop publishing.
- Students will be able to create various documents newsletters, brochures, making document using photographs, charts, presentation, documents, drawings and other graphic images.
- To work with the worksheet and presentation software.

Learning Outcomes:

After completion of the course, students would be able to;

- know the basics of computers and prepare documents, spreadsheets, make small presentations with audio, video and graphs and would be acquainted with internet.
- create, edit, save and print documents with list tables, header, footer, graphic, spellchecker, mail merge and grammar checker
- attain the knowledge about spreadsheet with formula, macros spell checker etc.
- go for higher studies such as diploma, bachelors or master's degree in related discipline.

Unit I :

MS-Word -Working with Files – Working with Text – Formatting, Moving, copying and pasting text Styles – Lists – Bulleted and numbered lists, Nested lists, Formatting lists. Table Manipulations. Graphics – Adding clip Art, add an image from a file, editing graphics, Spelling and Grammar, AutoCorrect - Page formatting, Header and footers, page numbers, Mail Merge, Macros - Creating & Saving web pages, Hyperlinks.

Unit II:

MS-Excel- Modifying a Worksheet – Moving through cells, Adding worksheets, rows and columns Resizing rows and columns, Selecting cells, Moving and copying cells, Freezing panes - Macros – recording and running. Formatting cells – Formatting toolbar, Dates and times, Auto formatting. Formula and Functions. Linking worksheets.

Unit III:

MS-Excel : Sorting and Filling, Alternating text and numbers with Auto fill, Auto filling functions. Graphics – Adding clip art, add an image from a file, Charts – Using chart Wizard, Copy a chart to Microsoft Word.

Unit IV

MS-Power Point -Create a Presentation from a template- Working with Slides – Insert a new slide, Applying a design template, Changing slide layouts -Slides: Reordering slides, Hide slides, Create a Custom slide show. Adding Content – Resizing a text box, Text box properties, Delete a text box. Video and Audio effects, Color Schemes & Backgrounds Adding clip art, Adding an image from a file, Save as a web page.

UNIT V

MS-Access - Using Access database wizard, pages and projects. Creating Tables – Create a Table in design view. Datasheet Records – Adding, Editing, deleting records, Adding and deleting columns Resizing rows and columns, finding data in a table & replacing, Print a datasheet. Queries.

UNIT VI

MS-Access Forms - Forms – Create a form using the wizard, Create a form in Design View. Form Controls. Sub forms-Create a form and sub form at once, Sub form wizard, Drag and drop method. Reports – Using the wizard, Create in Design View, Printing reports. Importing, Exporting, Linking.

REFERENCE BOOKS:

1. Sanjay Saxena, A First Course in Computers (Based on Windows 8 And MS Office 2013) Vikas Publishing 2015.
2. Jennifer fulton, Sherri Kinkoph, and Joe Kraynak, The Big Basics Book of Microsoft Office 1997, PHI, 1998.
3. Laura Acklen et al, Microsoft Office 97 Professional Essentials,EEE Que E&T, PHI (1998).

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22314 APPLICATION PROGRAMS LAB

Objective of the Course:

- To help the students to understand how to format, edit, and print text documents and prepare for desktop publishing.
- Students will be able to create various documents newsletters, brochures, making document using photographs, charts, presentation, documents, drawings and other graphic images.
- To work with the worksheet and presentation software.

Learning Outcomes:

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

- Integrate both graphs and tables created in Microsoft Excel into a laboratory report in Microsoft Word.
- Generate equations, sample calculations, and basic diagrams in Microsoft Word.
- Input experimental data into Microsoft Excel.
- Perform calculations in Microsoft Excel using both manually inputting formulas and built-in functions.
- Generate simple and effective tables and graphs to describe experimental data in Microsoft Excel.
- Properly format and organize a formal laboratory report in Microsoft Word.

Exercises based on MS-Word

- ❖ Working with Text, spell check and grammar
- ❖ Table manipulation
- ❖ Flow chart drawing
- ❖ Mail merge
- ❖ Create organization chart
- ❖ Real-time document preparation (Covering letter, greeting cards, invitation, brochure etc)

Exercises based on MS-Excel

- ❖ Performing arithmetic calculations using worksheet

- Using functions
- Using Graphs and charts
- Soring and filtering

Exercises based on MS-Power Point

- Designing slides for real time applications
- Using image, audio and video effects
- Using Animation and transition
- Using Wizard
- Using template

Exercises based on MS Access

Table manipulation

- Creating, altering and drop tables
- Inserting values
- Selecting and calculating values from the table
- Real-time application development (employee database , student database etc.,)

REFERENCE BOOKS:

4. Sanjay Saxena, A First Course in Computers (Based on Windows 8 And MS Office 2013) Vikas Publishing 2015.
5. Jennifer fulton, Sherri Kinkoph, and Joe Kraynak, The Big Basics Book of Microsoft Office 1997, PHI, 1998.
6. Laura Acklen et al, Microsoft Office 97 Professional Essentials,EEE Que E&T, PHI (1998).

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Minutes of the Meeting of the Board of Studies in Computer Science by circulation to Board Members, for the Diploma in Computer Applications, Certificate Course in Computer Fundamentals, Certificate Course in Web Designing and Certificate Course in C Programming programmes to be offered through Distance Education mode held at the Directorate of Distance Education, Alagappa University, Karaikudi on 29-06-2020 at 3.00 p.m.

MEMBERS PRESENT:

1.	Dr.V.Palanisamy	:	Chairman
2.	Dr.T.Meyyappan	:	Member
3.	Dr.P.Prabhu	:	Member
4.	Mr.S.Balasubramanian	:	Member
5.	Dr.P.Eswaran	:	Member
6.	Dr.P.Thiyagarajan	:	Member
7.	Dr.R.Indra	:	Member
8.	Dr.A.Veera Ravi	:	Ex-Officio Member

After the deliberation and discussion the board resolved the following:

1. The Board considered the curriculum design and detailed syllabi of Computer Science Programmes prepared as per the norms and the Board scrutinized and necessary modifications are specified.
2. The Board resolved to approve curriculum design detailed syllabi and other regulations for the Diploma in Computer Applications, Certificate Course in Computer Fundamentals, Certificate Course in Web Designing and Certificate Course in C Programming programmes to be offered from 2020-2021 academic year onwards by the Directorate of Distance Education, Alagappa University, Karaikudi.

29/6/2020
Dr.V.PALANISAMY

29/6/2020
Dr.T.MEYYAPPAN

29/6/2020
Dr.P.PRABHU

Mr.S.BALASUBRAMANIAN

29/6/2020
Dr.P.ESWARAN

Dr.P.THIYAGARAJAN

Dr.R.INDRA

29/6/20
Dr.A.VEERA RAVI