Details of the course proposed:

Name of the course: Certificate Course in
Importance of Sanskrit language constructs in Computer Science.

Background:

As we all know, the (Stored-program Electronic Digital) Computer is an *algorithmic* machine. The three adjectives shown in brackets are often unpronounced while naming this system. The *'Stored-program'* or the software part of this digital computer system is based on the binary encoded version of the corresponding set of suitably arranged algorithms. A systematic Developer follows the standard design cycle viz.

Algorithm=> Flowchart => Coding=> App=> Testing,

in order to create an optimal program (or an App) for a given task. Thus a User in the cyber world or Digital India indirectly invokes some algorithm while tapping various services via Apps!

The course depicts certain equivalents of Algorithms appearing through classical Sanskrit texts.

After **explaining the *Classical Sanskrit words connoting the (modern acronym) word* Algorithm**, the course presents **a number of** classical Sanskrit algorithms (संस्कृत-अल्गोरिदम्) with lucid illustrative examples. **Their corresponding Modern English languages Equivalents are also tabulated.** Students, researchers, faculty members from any branch find this general/popular presentation interesting & useful. The topic forms an integral part of the subject षड्गणकीय-संस्कृतम्, depicting the importance of Sanskrit constructs the wider fields of Computer Science.

Chairman AICTE, Dr. A. D. Sahasrabudhe has recommended that this course is very important & useful for Engineering & Computer Science in Institutions.

Objectives: To acquaint the students with:

1. Sanskrit references to Positional Decimal Number System & Numerical procedures
2. The Algorithmic nature of modern Digital Computer & useful Sanskrit Algorithms
3. Scientific nature of the classical language Sanskrit & its importance in the wider fields of modern computer science.

Duration: 30 Hrs

SP

Course Co-ordinator
Dr. Snehalator Muley

Eligibility: HSSC and / or anyone interested in Psychology

Medium of Instruction: Hindi/Marathi/ (with Sanskrit References)

Batch Size: 30

Fee Structure: 100

Cradit: 2

Faculty: 1. Dr.Chandragupta S. Warnekar, Principal & Professor (Retd), Cummins College Pune & Jhulelal Institute of Technology, Nagpur

Evaluation: Total 100 marks (50 Marks online Objective Written Test at the end of the course + 50 marks for Unit Testl evaluation)

Expected Course Outcome:

After completion of the course the students should be able to:

1. Understand the scientific importance of the classical language Sanskrit.
2. Interpret the Sanskrit references to Decimal & Binary Positional Number Systems
3. Compare the Sanskrit Algorithms & their modern equivalents
4. Work as a Developer by following the standard design cycle viz.
   Algorithm=> Flowchart => Coding=> App=> Testing,
   in order to create an optimal program (or an App) for a given task.
5. Explain/Teach a few Sanskrit Algorithms

Course Co-ordinator
Dr. Snehalata Muley

CERTIFICATE COURSE

Name of the course: Certificate Course in
Importance of Sanskrit language constructs in Computer Science.
Credit : 2

Syllabus

UNIT –I: Prologue, Analysing the Title Words, Sanskrit language & its characteristics useful in Computer Science , History of the word Algorithm, Unit Test 1 Time: 5 Hrs

UNIT –II: The Decimal Place Value Positional Number System of India, Abstract & Object-specific Numerical Operations, Binary Number System, Numerical Operations in Computer, Original Sanskrit terms for the Basic Arithmetical Operations, Symbols, Sanskrit Algorithms for certain Basic Arithmetical Operations, Unit Test 2 Time: 5 Hrs

UNIT-III Definitions of Data/ Information/Knowledge, Computer oriented Numerical 0perations about Entities, The computational Trio & its Sanskrit references, Remainder, Proportion Direct/Inverse, Rule Of Three, More Sanskrit Algorithms, Related Topics with Sanskrit References. Unit Test 3
Time: 5 Hrs

UNIT- IV Sanskrit references to Use of unknown variables, Algebraic operations, Types of Algebraic Equations, Algorithm to solve Quadratic Equation, Kuttakam or Pulverizer, Computational Logic, Language Based Maths, Computer Graphics, Few more Sanskrit Algorithms and their Explanation with suitable Examples, AI & Intuition, Computer Games, Unit Test 4
Time: 5 Hrs

Course Co-ordinator

Dr. Snehal ata Muley