संस्कृत और भारतीय संस्कृति SANSKRIT & INDIAN CULTURE

ऊर्ध्वमूलमधःशाखमधत्थं प्राहुरव्ययम् । छन्दांसि यस्य पर्णानि यस्तं वेद स वेदवित् ॥॥॥

ürdhva-mülam adhaḥ-śhākham aśhvattham prāhur avyayam chhandānsi yasya parṇāni yas tam veda sa veda-vit

(Purushottam Yoga: Bhagabat Gita: 15.1)

The Genesis



OF THE SIX VEDANGAS

ऊर्ध्वमूलमधःशाखमधत्थं प्राहुरव्ययम् । छन्दांसि यस्य पर्णानि यस्तं वेद स वेदवित ॥॥॥

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(Purushottam Yoga: Bhagabat Gita: 15.1)

.....The problem of Vedic Exegesis then is the problem of reviving the spirit and re-creating the inner experience of the atmosphere in which the Mantras took shape....like the mystic Asswattha tree 'with its root above and the branches below', the Vedic tradition, in a broad sense, stands at the very source of almost all forms of Indian spiritual cults. And the interpretation of this tradition can be attempted with high results if we do not place the Vedas on the isolated heights of the past, but with a total vision of the present retrace our steps to the roots discovering, with a penetrating insight, the links at every step. But this movement in breadth must be supplemented by a movement in denth'.

- Shri Aniryan

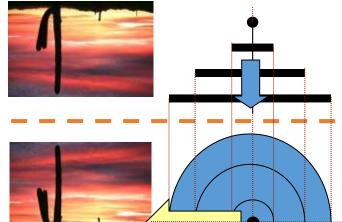
Descending & Ascending frameworks

The depth and breadth of the Vedic Religious Ideal

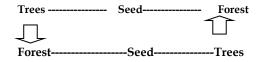
- The ancient Rig Vedic symbolism: 1.164
- The Kattha Upanishad....
- The Gita & the earliest Buddhism



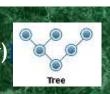
High Root (*mulam*) to low branches (*sakham*)



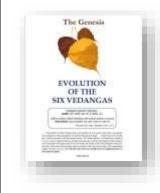
Inner Core (antara) to outer periphery (bahir)

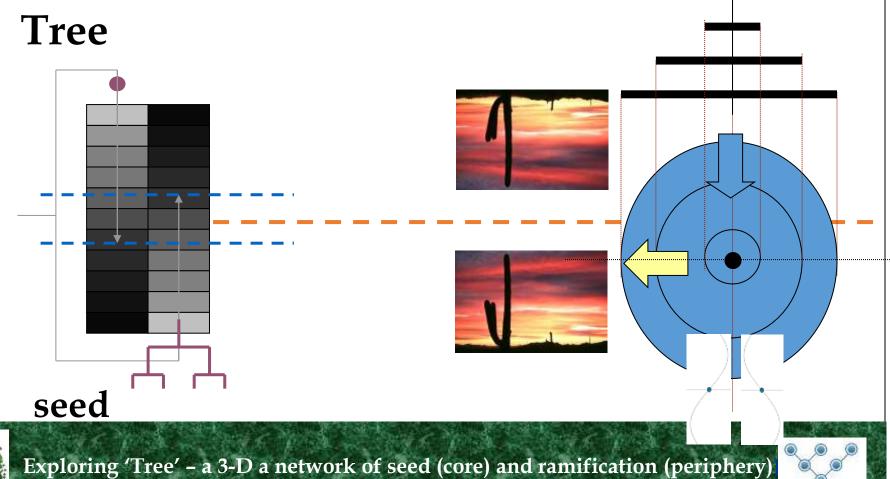






A Dicotyledonous (2 CELL) pattern: Networks in a ladder

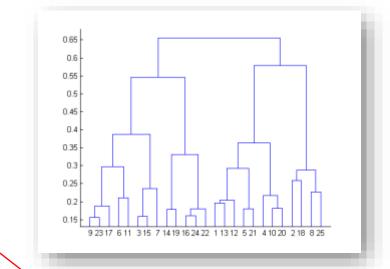






Dendron-grams 1

Red implies disjointedness between the personal-ego level and the rest of the framework

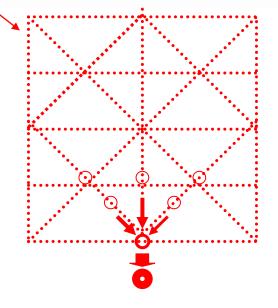




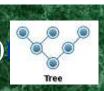
The periodic nodes of turning or tropics:

There is one more fact about this rising and falling. The seed comes out of the TREE, but has a period of inactivity or rather a period of very fine unmanifest action.

The seed has to work for some time beneath the soil. It breaks into pieces, degenerates (dies) as it were, and regeneration (resurrects) comes out of that degeneration.

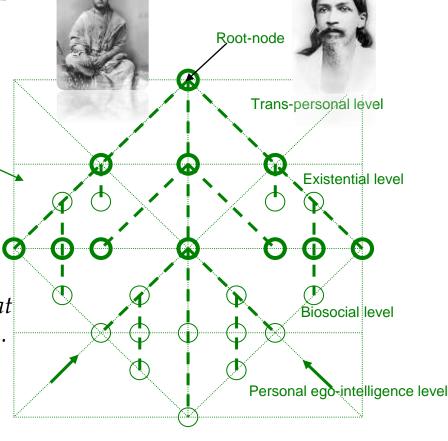




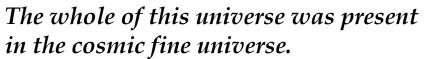


Trans-personation 2

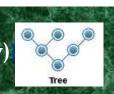
Green implies the network of junctions
between the personal-ego level and the other levels in rest of the framework

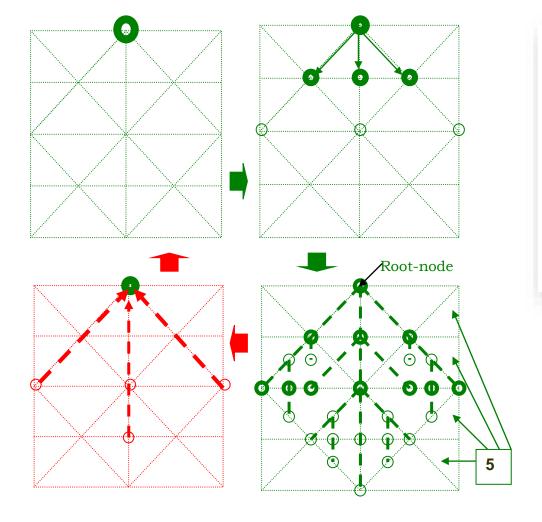


Involution precedes evolution: We have to go one step further, and what is that? That every evolution is preceded by an involution. The seed is the mother of the TREE, but another TREE was itself the mother of the seed. The seed is the fine form out of which the big TREE comes, and another big TREE was the form, which is involved in that seed.



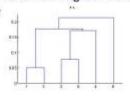


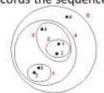




Hierarchical Clustering

- Produces a set of nested clusters organized as a hierarchical tree
- · Can be visualized as a dendrogram
 - A tree like diagram that records the sequences of







Narrowing to an isolated state (1A) of individual intelligence

Level of narrow ego (1)

De-linked from the **spectrums of intelligence** at the

biosocial level (2) and consequentially the higher ones: Existential level (3), Trans-personal level (4) and ultimately holistic intelligence inherent in the

Whole TREE (5)

A Four-stage cycle of sustainable dynamism evident in the stratified framework of the TREE Starting from bottom right – full TREE (5) with 4-depths or levels;

Bottom left - traversal through the four levels and tracing back to root node of TREE;

Top Left - Reaping of all levels (or contraction to the trans-personal level or the Root-node);

<u>Top right</u> - Sprouting or extension from the root node;

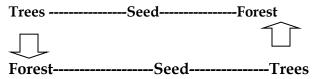
Individual intelligence that has traversed all four stages attains holistic intelligence by knowing the complete TREE.



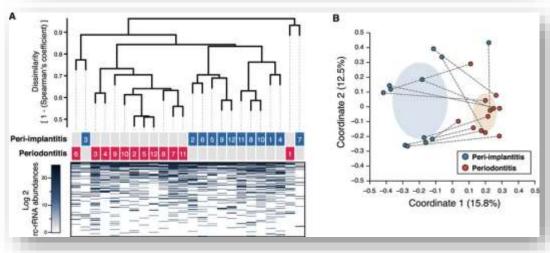


Who is involved? Who is evolving?

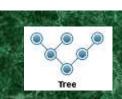
A priori - Recognition of the involutionary principle in an evolutionary process: This involution and evolution is going on throughout the whole of nature. The whole series of evolution beginning with the lowest manifestation of life and reaching up to the highest, the most perfect man (Anthropic Principle), must have been the involution of something else. The question is: The involution of what? What was involved?











EVOLUTION OF THE SIX VEDANGAS

नासतः सत् जायते — Existence cannot be produced by non-existence.

Non-existence can never be the cause of what exists. Something cannot come out of nothing. That the law of causation is omnipotent and knows no time or place when it did not exist is a doctrine as old as the Aryan race, sung by its ancient poet-seers, formulated by its philosophers, and made the corner-stone upon which the Hindu man even of today builds his whole scheme of life.

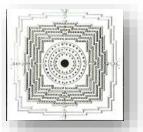
There was an inquisitiveness in the race to start with, which very soon developed into bold analysis, and though, in the first attempt, the work turned out might be like the attempts with shaky hands of the future master-sculptor, it very soon gave way to strict science, bold attempts, and startling results.

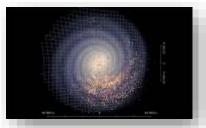
Behind and before this analytical keenness, covering it as in a velvet sheath, was the other great mental peculiarity of the race — poetic insight. Its religion, its philosophy, its history, its ethics, its politics were all inlaid in a flower-bed of poetic imagery — the miracle of language which was called Sanskrit or "perfected", lending itself to expressing and manipulating them better than any other tongue. The aid of melodious numbers was invoked even to express the hard facts of mathematics.

SWAMI VIVEKANANDA
HISTORICAL EVOLUTION OF INDIA

INTRODUCTION TO STHAPATYA VASTU & NIRMAN VIDYA AND ARTHASHASTRA (KS 60001)

Autumn 2022 3-0-0







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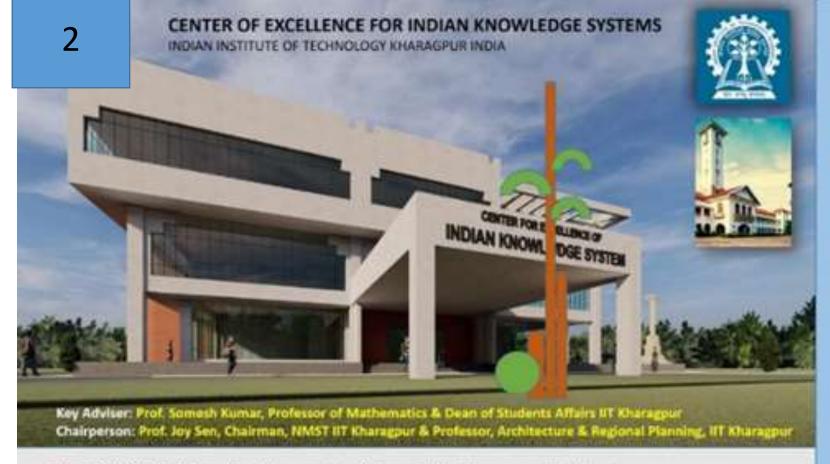
Shreyas Bharule

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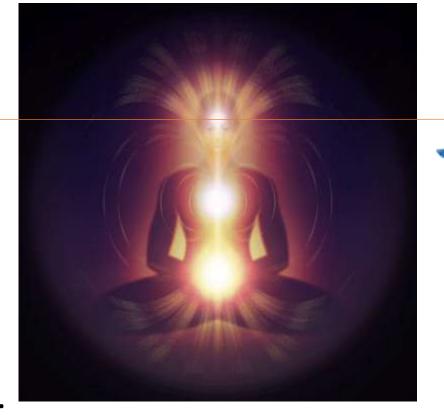
http://www.iitkgp.ac.in/files/phd brochure.pdf

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- Rasayana (Indian Chemical Sciences)
- Ayurveda (Indian Biological Sciences)
- Jyotir-tatha Mahajagatika Vidya (Indian systems of Positional and Astronomical Sciences)
- 7. Prakriti Vidya (Indian system of Terrestrial/ Material Sciences/ Ecology and Atmospheric Sciences)
- Nandan Tathya tatha Vastu Vidya (Indian system of Aesthetics-Iconography and built-environment/ Architecture)
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- Shilpa tatha Natya Shastra (Indian Classical Arts : Performing and Fine Arts)





Part 1

RECOVERY OF INDIAN KNOWLEDGE SYSTEMS

- THE ROOT CAUSE? WHY?













A paradigm expansion for building creative systems – why?

Our obsessions with a reductionist view of existence have obscured our power of assimilation and pushed us to the brink of uncertainty and disaster.

Socio-cultural: Community and individual lifestyle disorders

Climatic: Environmental and ecological imbalances

Geo-political: Tensions between MNC/ TNC versus small organizations

Economic: Demand and Supply mismatches



1 Economic:

Demand and Supply Mismatches





2 Geo-political:

Tensions between Global and Local organizations





3 Climatic:

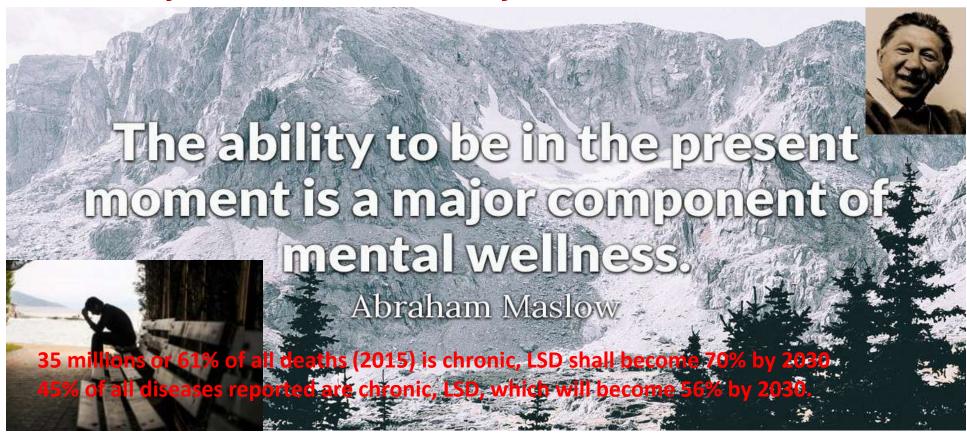
Environmental and Ecological Imbalances



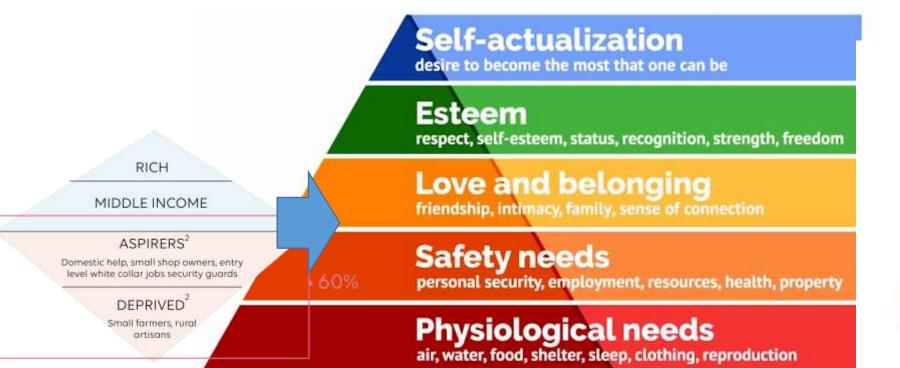


4 Socio-cultural:

Community and Individual Lifestyle Disorders





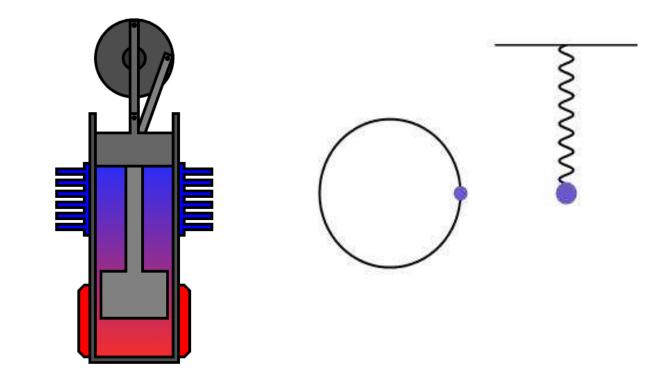




Ladder of needs (Maslow's Hierarchy)



From the individual to the universal From the Competitive to the Cooperative



Part 2

RECOVERY OF INDIAN KNOWLEDGE SYSTEMS

- WHAT & WHY?













भारत तीर्थ BHARATA TIRTHA

भारतीय विज्ञान एवं प्रौद्योगिकी का उद्गम • Origin of Indian Science and Technology

त्रजापरा ऋग्वेदो यजुर्वेदः सामवेदोऽथर्ववेदः शिक्षा कल्पो व्याकरणं निरुक्तं छन्दो ज्योतिषमिति। अथ परा यया तदक्षरमधिगम्यते ॥५॥

Episteme of Indian Karwindge System (Apara Vidya) and Wisdom (Para Vidya)
Musdake Openinkad 3.1.5

The interloop representation of the faith of the fact, when they are determined, and the strong program is interlooped of the contract of security of the experiment of the process of the contract of the con

प्रस्तावना Preamble



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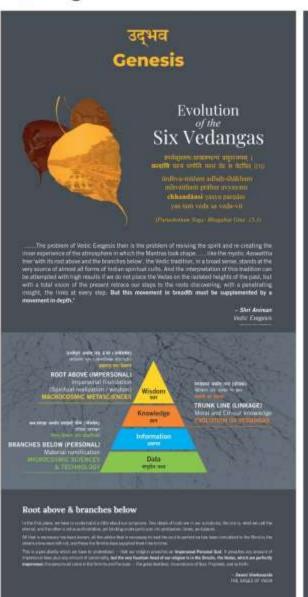


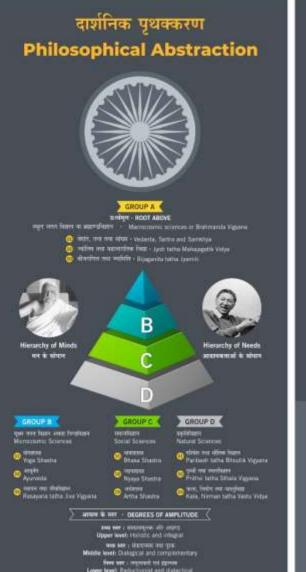
Williams













मूर्त साक्ष्य **Tangible Evidences**

Prehistoric art hints at lost Indian civilization

प्रागैतिहासिक कला विलग्त भारतीय सभ्यता की ओर संकेत करती है।

where to direct and it also gots assess forest \$-

A set of fell top or mounted petrographs dated to 10000 BCE or earlier, which depicts 12 spoke jested solar artist diagram. cosmic zonnerghic and withrepresenthic hypernes Ginal Bear, Canopist and others, are evident in and around Ramagin Konkan Western Ghats, India.













Submerged ancient Indian Nation of Polerpular (13000) was facilitated by marine archaeologists of NIO in 1991. If may have bearing with the lost legends of KUMARI KANDAM present Holocene period (prior to 11700 BCE)

90000 वर्षों से अधिक के मूर्त साक्ष्य **Tangible Evidences over** 10000 years



दशनवास, दशम, और सूर्य मण्डल में परिक्रमा करने वाला दशमलव The Dashagwas, the Dasam, and the orbiting Decimal in the Surjya Mandala

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The sections are clearly the seven roses and the two throughts are evaluable for some. Many we not then conclude that it is the addition of large Aproposition the Managium within rows the nine Managions in the number of ten and problem from to its allowance of the seven headed Dann comparetag. thought to prolong their nine morth? proffer through the term month

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वृत्त अथवा वलय: काल चक्र मण्डल

The ORB or CIRCA (Charka or Kirk) of Time: Mandala of Kalachakra



१८ कुए को, विकार से मान्य को पान नहीं पाने, पाने, विकासनीय ने अपूत्रा मोहिनक नवनिय करते हुए सालीय तेवस अनवक हिन को से सेंदर देखें अधिया कर

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On 18 June, World's topmost Center of PARTICLE PHYSICS, CERN, Switzerland, unveiled an unusual new landmark, a 2m tall statue of the Indian deity Lord Shiva.

The statue is a gift from india, cerebrating CERNs long association with India which started in the 1960's and continues sitrongly today. It was unveiled by the Director General, Dr Robert Agmar, His Excelency Mr. K. M. Cherchaekhar, Ambassador (WTO-Geneva) and Dr Anti Kakodiur, Chairman of the Atomic Energy Commission and Secretary, Dept of Atomic Energy India.

In the Hindo religion, this form of the dancing Lord Shiva is known as the Natural and symbolizes his unity with the other half, which is Shaith, or the Cosmic the force. As a pluque alongside the statue explains, the resilization of Yogas is that Lord Shiya danced the Universe into existence, motivates and sustains it, and will eventually dissolve it to go to transcendence till the wave emerges gain in the next cycle. Carl Sagan drew the mesuphor between the cosmic dance of the Natural and the modern study of the tosmic dance of subattomic particles.

The status was made in India. The original sculpture was a was model, around which a soil mould was made. Mening the was left a notice into which equipmental was poured. Once cooled, the mould was split and the status polished and given its antique finish. The status is on permanent display in the square between buildings 39 and 40, a short clistance form the Main Building.

सूक्ष्म जगतः मानवशास्त्रीय मापन The Microcosm: Anthropometric Scale

जीवन पांधेका नुबारे औरत है, और फिर भी जुब रिमजारों और पीटर्स का हो हो और हर तक की कार्यांचन निर्माण कर के हो। एकबाव देखर बनव सर्वेर में मानव अन्य है निवासों पूर्ण होंगी चाँहा। निजीव कर्ज जीवी का सर्वेट मीटर है, लेकिन वानव समीचन जीव है और मीटर्स में लागमान है। जार में उससे एक मीटे कर सकता, तो किसी और मीटर का कोई तक्ष नहीं होता।

rossit finterety

remarker date one other remarks, ay under 65 to

The living God is within you, and yet you are building churches and temples and believing all sorts of imaginary nonsense.

The only God to worship is the human soul in the human body. Of course all animals are temples too, but man is the highest, the Taj Mahai of temples.

If I cannot worship in that, no other temple will be of any advantage.

Swami Vivekananda

Practical Vedanto III, Delivered in Landon, 12th November 1896



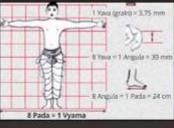
8 Paramanu = 1 Trasarenu

8 Trasarenu = 1 Liksa

8 Liksa = 1 Yuka

8 Yuka = 1 Tila

8 Tila = 1 Yava (3.75 mm)

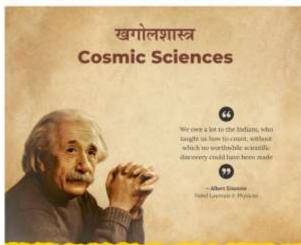




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ब्रह्माण्ड विज्ञान **BRAHMANDA VIGYANA**

रवगोलशास्त्र • Macrocosmic Sciences



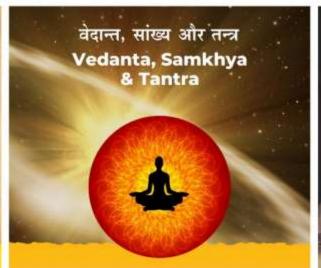


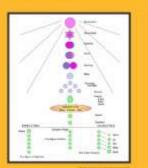


















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पतिरेकासीत। स दाधार पृथ्वी ध्यामुतेमां करमे

हिरण्यगर्भः समवर्तताचे भूतस्य जातः

देवायहविषा विधेम।।

बीजगणित और ज्यामिति Algebra & Geometry



that they acquired, during the Milconstury, their first knowledge of astronomy. About \$30 AD Muhammad-bit Niesa al-Юуканасті, a transfator of anathematical and apprecipital books from the Sanskett, published a book which was translated into Catto in the 12th Century. whiter the title 'Algorithm de numero Indrum'. It was from this book that the West Rest learns of what we call 'Anabic numerals, which ought to be called 'trahan'. The same author sense a



book on Al-gebra which was used in the West as a text book until 18th century."



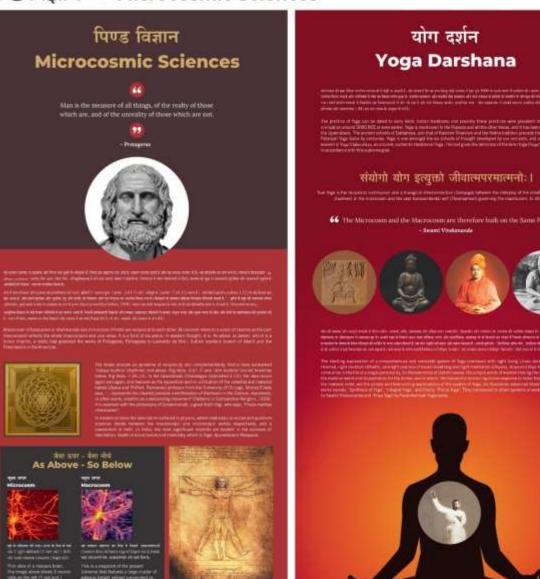


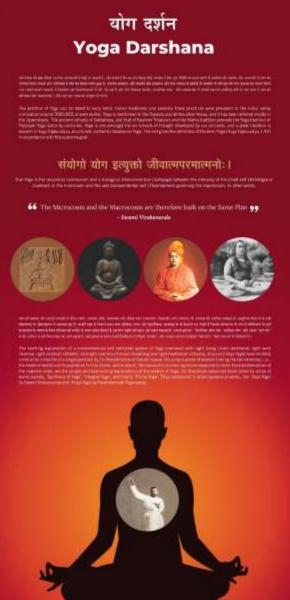


पिण्ड विज्ञान **PINDA VIGYANA**

पिण्ड विज्ञान • Microcosmic Sciences







सर्वभूतस्थमात्मानं सर्वभूतानि चात्मनि। ईक्षते योगयुक्तात्मा सर्वत्र समदर्शन: ।।६.२९।।

रसायन

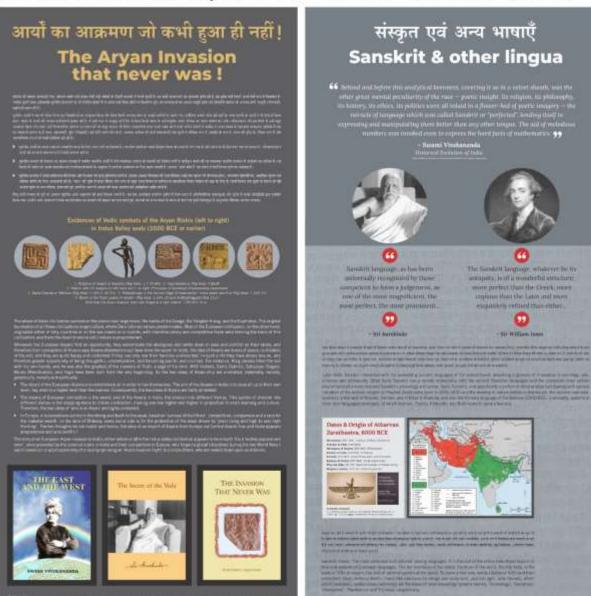
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समाज विज्ञान **SAMAJ VIGYANA**

मानविकी एवं सामाजिक विज्ञान • Humanities and Social Sciences





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सं गटछध्वं सं वदध्वं सं वो मनांसि जानताम। देवा भागं यथा पूर्वे संजानाना उपासते ।।३।।

to the united the thought process based on the realized unity of seeks and accordingly, let us perform our disters.





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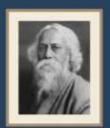
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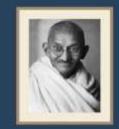
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भारतीय ज्ञान प्रणाली (आईकेएस) का प्रवर्तन Initiation of Indian Knowledge Systems (IKS)

Ship from Yokohama to Vancouver May 31 - June 5, 1893



Chicago September - October 1893











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contraction manager (1952-1962), the new result (1962-1962) contraction on the analysis of the contraction of the second state of the contraction of the second state of the contraction of the contraction

A recent history on the exclusion of IRS began when Indian Saint and Propher-Reformer Swami Vivesananda sail did for the American. In a ship from Yokohoma to Vancouver, Swami Vivesananda and Sir perations from discussed at large, the confluence of incider value systems based on spiritual goals grading the best of western modernization further based on material impacts in their based on material impacts.

After the great success at the Parliament of Religions in Chicago 1893, Swami Viversanance had a long conversation with Scientists Nikola Testa, Hermann Helmholtz, and Lord Kelvis, and later with Friedrich May Willier in London 1896, to best augment a new path for designing the confluence. Finally, in 1901, Initimatys Tilak came to Calcutta, and the Headquarters of Ramakrishna Mission Befur Math to discuss with Swam ji the possibility of an Institute of Yedic Sciences based on modern tochnological provides

In the subsequent decade, the confluence gained further momentum when Nobel Laureate and World Poet Rabindraristh Tagme met another Nobel Laureate Sir Albert Einstein in 1930 at Berlin. A

But a real beginning was initiated in 1952, when Dr. Handas Chaudhur, word to the American to establish the American Institute of Indian studies and eventually, the California Institute of Integral Stadies based on the forcinning works of Sri Auntbindo. Eventually, great thirtiers and reformers live Ansold Toyntoe. Alan Watts and Abraham Meskov came in and festored a new spirit of Berkeley, Psychologist Stanlinae Graf, Environmentalist Geogray Battson, and Ecologist Ame Nass careed new ideas of IKS based on to lists in purpose from the Kashing Shawlan school and its proprient in the USA. Swam Maktananca, Another important novement was forwarded by Bisamharman Yogananda and his seminal work on Waya Yoga' and "The Science of Religion".

Finally, the first V or President of India (1952-1962) and the second President of India (1962-1967), a great statement and a writer threfore. Dr. Servepalli Radiokratinan re-emphasized the most of a Control of Learning on India Studies with highlight books and concern. At Shimile, under his guidance, the Indian Institute of Advanced Study (1965) was formed. It was IIAS Shimile, the first systematic study on Indian Knowledge systems (IKS) was proposed by scholars and professors, with Dr. Albeit Kappor and Dr. A. K. Sings among many. A new era has deviced street then



Part 3

RECOVERY OF INDIAN KNOWLEDGE SYSTEMS

- PRESENT COURSE?: KS60001













INTRODUCTION

The course shall introduce the ideational constructs, foundational components, building blocks, and the working principles of the three interrelated domains of Indian built-environmental knowledge systems:

- 1. Indian architecture (*Sthapatya Vastu Vidya*) (modules 1 12)
- 2. Indian structural and public health engineering (Sthapatya Nirman Vidya) (modules 13 18)
- 3. Treatise and approaches of developmental economics as conceived in India (*Arthashastra*) (modules 19 21)

The course will bridge the ancient knowledge system and the current needs of built-environmental design processes by exploring case studies, both ancient and modern, for its appropriate recovery and repositioning in the contemporary times.

COURSE 1: IKS 1

An interconnected / Holistic paradigm of built-environmental and developmental sciences and application (technology)

Indian Constructs of

- Built-Environmental sciences (Vastu Vidya)
- Construction and Installation sciences and technology (Nirman tatha Sthapatya Vidya)
- Developmental and behavioral Economics (Arthashastra)



- Data Analytics
- Visual software
- Lidar/ GPR/ GIS applications
- Climate science softwares

Built-Environmental sciences and technology (Vastu Vidya)



- Vastu Vidya
- Heliocentric and geocentric complementarities
- Solar physics
- Building envelope and taxonomy of Anthropometrics/ Ergonomics/ Semantics/ Semiotics (Shilpa Shastras)

Construction and Installation sciences and technology (Nirman tatha Sthapatya Vidya)



- Takkhana (Technology and measurements)
- Nirman vidya (Construction sciences)
- Sthapatya Vidya (installation sciences)
- Paribesh Vidya (Environmental and ecological sciences)

Developmental, Welfare and Behavioral Economics (Arthashastra)

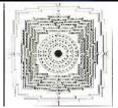


- Arthashastra
- Dana and seva (principles of behavioral economics)
- Affordabity and Social sciences

Origin of IKS 1: STHAPATYA VASTU VIDYA

- Module 1 3: Origin of Sthapatya Vastu & Nirman Vidya Evolution of footprints, and patterns of Mandala based on complementarities / recursions/ fractals of a) Vast scales (cosmological and astronomical constructs) and small structures (ecological and terrestrial designs);
- fundamentals of Composition, Colour, Rhythms, Elements of Design, Iconography based on *Vastu Purusha Mandala*;
- Exploration of Shastras as per variations in geocentric (regional, climatic, ecosystem) and solar (Helio-centric) systems and their complementarities.

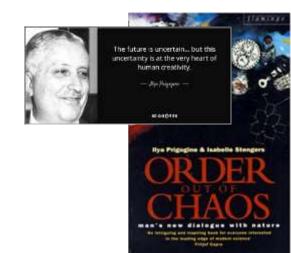


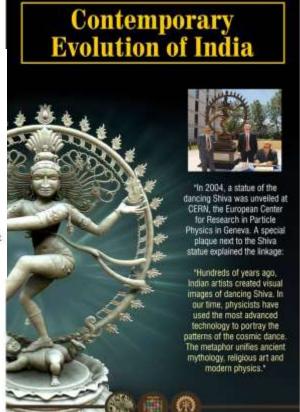




Niels Bohr's Coat of Arms Ar From Fritjof Capra's Tao of Physics







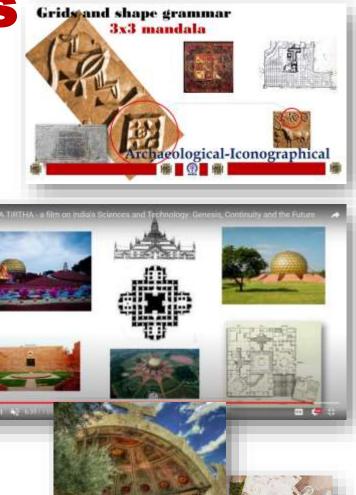
Contemporary context: SDG connections & Ekistics

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Module 4 - 5: Conformity to Current Sustainability
 Development Goals (SDG, UN): Goals 8 (Inclusive networks),
 11 (Community systems), 12 (production, demand, supply and distribution), 14 (Natural, environmental, river and marine ecosystems design) – CASE STUDIES

• Module 6 - 7: Hierarchical principles for the design of Pithas: modulation of sites, and layout of buildings (various land uses) and aggregate land-use systems in towns and cities; hierarchy of networks in a settlement system and the natural alignment and direction of waterways, water works, natural landscapes, drainage and sanitation and regional ecosystems (as per ancient Shastras) — CASE STUDIES

 Special modules: INDIAN ngineering systems (CIVIL, ELEC & MECH) – CASE STUDIES



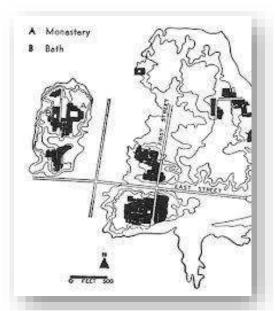
CASE STUDIES & CURRENT TIMES

Practice and Industrial production of IKS 1

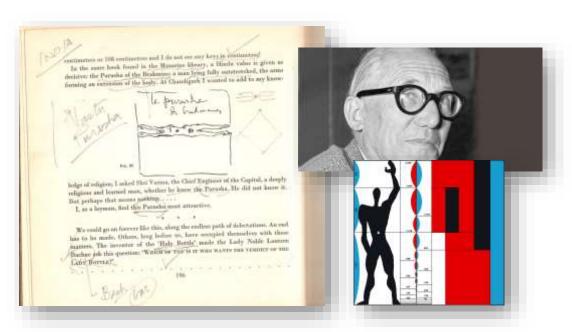


• Modules 8 – 12: Evolution and application of *Shilpa* and *Chitra Shastra*(s) in Indian architectural and aesthetic traditions; Continuity of materials and techniques of construction in Indian traditions and modernity; Recent works of Charles Correa, B. V. Doshi, Le Corbusier, Paulo Soleri, Christopher Benninger and others.

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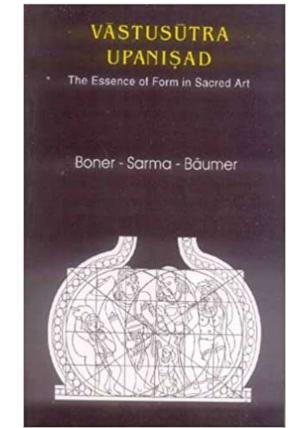




Nirman Vidya 1: IKS of Construction S&T

Module 13 – 15: Presentation of traditions of *Mayamatam* and *Mansara* based on

- a) Indian Traditional Structural System Material, Element, Geometry and Proportion, Evaluation of Structural system in stages;
- b) Indian Traditional Building Science Material Property, Form and Composition. Evaluation of elements and spaces;
- c) Indian Traditional Construction Technology Stages of construction activities and operation; green materials and bamboo/ reeds;
- d) Application of Traditional System in Modern Architecture Lessons from the past, Adaptation and Deviation, Modern Application area.

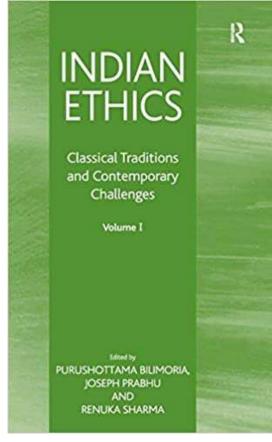


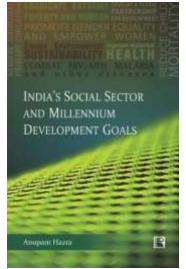


Nirman Vidya 2: IKS of Environmental and PHE

Module 16 – 18: *Aranyak* and Green conservation principles of

- a) Water/ Energy Management in Ancient India Review of the management systems from ancient practices, its application as on date
- b) Sustainable Water Management Practices from Ancient India Afforestation, Rainwater harvesting, Ahar and Pyne System of Irrigation, Gabarband' and others;
- c) Indian Traditional Liquid and Solid Waste Management Systems - Wastewater management (from about 3000 BCE), Domestic grey water management and many others.
- d) Application of Traditional System in Modern Water, Environment and Energy Systems - Lessons from the past will be highlighted and case studies.





ARTHASHASTRA: IKS of DEVELOPMENTAL ECONOMICS

 Module 19 – 21: a) Introduction to principles of Arthashastra; b) public finance; c) Green livelihoods; and (c) welfare economics - modules on principles of good (i) Taxation, (ii) public expenditure (with focus on infrastructure development and basic utilities), (iii) promotion of livelihoods, and (iv) resource conservation, green demand and supply, LCA and sustainability.





ORGANIZATION & COORDINATION







FACULTY IN CHARGE

- Prof. V. R. Desai
- Prof. Narayan C. Nayak
- Prof. Pulak Mishra
- Prof. Brajesh K. Dubey
- Prof. Shankhapratim Bhattacharya
- Prof. Ankhi Banerji
- Prof. Shreyas Bharule

&

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WHY THE TWO VASTS MEET?

It is probably true quite generally that in the history of human thinking the most fruitful developments frequently take place at those points where two different lines of thought meet.

Werner Heisenberg











