

M.A. (Sanskrit Studies)

Department of Sanskrit Studies
University of Hyderabad

1 Objective:

Sanskrit is the primary culture-bearing language of India, with a continuous production of literature in all fields of human endeavour over five thousand years. Sanskrit works include epics, subtle philosophical, mathematical, medical, legal and scientific texts, rich literary, poetic and dramatic texts. The intellectual and cultural heritage of India has been a major factor in the development of World's religions, languages, literature, arts, sciences and history.

The Department of Sanskrit Studies, in the last decade had concentrated purely on research, with an aim to build bridges between the Ancient Indian knowledge systems and the current knowledge systems. As an outcome of this exercise we could discover several knowledge ores of Sanskrit that are relevant in the present context.

All the major disciplines such as grammar, astronomy, geometry, etc. were developed with some or the other application in mind. While those applications might not be relevant today, still we will find the study of many of these disciplines relevant in the contemporary context. It is necessary that our students get acquainted with the contributions of our heritage in various domains of knowledge and also their relevance in the present era.

With this goal we present the syllabus for M.A. in Sanskrit Studies.

The syllabus is designed in such a way that the students are taught the Sanskrit texts in the same traditional manner, but at the same time they are also shown the interface of these knowledge systems with the modern knowledge systems. Thus the students are exposed to the importance and applicability of the knowledge they acquire in the current context. This

course will equip them to take up research in inter-disciplinary areas. At the same time they will also be confident enough to derive insights from Indian knowledge systems into their own disciplines. In addition to all the openings a regular student of Sanskrit has, these students will have an edge over them with an exposure to the knowledge systems in other disciplines. Journalism, health industry, IT industry would provide them ample job opportunities apart from teaching and research.

We have chosen four interfaces

1. with Computational Linguistics and Vyakarana,
2. with Sciences,
3. with Social Sciences, and
4. with Mathematics and Computer Science

In future, with the expertise of new faculty, we may plan to offer more choices in broad areas of Science and Technology, Aesthetics, Women / Gender issues, Environmental studies, and so on. We shall invite faculty from other schools and departments to offer inter-disciplinary courses related to knowledge systems in Pre-modern India.

Eligibility:

B.A. in Sanskrit/Shastri/Vidwanmadhyama/Acharya

OR

Graduate from any discipline with Sanskrit as one subject at school /
higher secondary / college level

OR

Graduate from any discipline with certificate or PG diploma in Sanskrit

The entrance examination will test the working knowledge of Sanskrit. Once admitted a mandatory bridge course has to be undertaken by those who do not have a bachelor's degree in Sanskrit.

Total Credits: 70

2 Syllabus at a glance:

Semester I			Semester II		
1.	Vedas	4	1.	Vedāṅgas	
2.	Scientific literature in Ancient India	4	2.	Elements of Darśanas and Ontolog	
3.	Vyākaraṇa & Linguistics	4	3.	Vyākaraṇa	
4.	Sanskrit Literature	4	4.	Sanskrit Poetics or Navya vyākaraṇa	
5.	Foundation Course	3	5.	Foundation Course	
Semester III			Semester IV		
1.	Indian Research Methodology	4	1.	Philosophy of Language	
2.	Elective I	4	2.	Elective III	
3.	Elective II	4	3.	Elective IV	
4.	Indian Philosophy	4	4.	Project / Elective V	

1. Electives I & II

(a) Computational Linguistics

- i. Introduction to Sanskrit Computational Linguistics -I
- ii. Computational Aspects of Aṣṭādhyāyī
- iii. Modern Indian Languages: A Pāṇinian Perspective

(b) Sciences

- i. Introduction to Āyurveda
- ii. Introduction to Indian Psychology
- iii. Health Humanities

(c) Social Sciences

- i. Arthaśāstra, Economy and Polity
- ii. Smṛti, Law and Jurisprudence

(d) Mathematics and Computer Science

- i. Ancient Indian Mathematics - I
- ii. Computational Aspects of Aṣṭādhyāyī

1. Electives III & IV

(a) Computational Linguistics

- i. Introduction to Sanskrit Computational Linguistics -II
 - ii. Navya Nyāya Techniques and Methodology
- (b) Sciences
- i. Philosophy of Science
 - ii. Advanced Indian Psychology
 - iii. Vṛkṣa-āyurveda and Agricultural technique
 - iv. Medical concepts in Sanskrit Literature
- (c) Social Sciences
- i. Vṛkṣa-āyurveda and Agricultural technique
 - ii. Society and Management studies
- (d) Mathematics and Computer Science
- i. Ancient Indian Mathematics - II
 - ii. Navya Nyāya Techniques and Methodology

3 Detailed Syllabus

3.1 Semester-I

3.1.1 SK401 Vedas

- Origin and background
- Rgveda and Indian civilisation
- Various commentaries and texts on Vedas
– Max Muller, Weber, Jacobi, Tilak
- Archeological, textual, genomic evidence
- Four Vedas and their branches and sub-branches:
Ṛgveda, Yajurveda, Sāmaveda and Atharvaveda
- Arrangement of the Ṛgveda, its content, Deities, Subject matter, Dialogue hymns
- Recensions of Samhitās
- Brāhmaṇas, Āraṇyakas and Upaniṣadas
- Prātiśākhya
- Recitation of Vedas, padapāṭha, aṣṭa-vikṛti, its comparison with error detection and error correction codes in computer science
- Analysing Vedas, Mantras, Ritual
- Vedic sūktas and various Humanitarian and Societal aspects
- Śābarabhāṣyam : Tarkapāda
- Brahmasūtraśamkarabhāṣyam - End of first sūtram

Reference Material:

- The New Vedic Selection: Pt. N.K.S. Telang and B.B. Chaubey
- Bṛhaddevatā: Prof. V.K. Verma
- Vaidika Devatā – Eka Aitihāsika Vivechana : Prof. K.P. Singh
- Ṛgvedabhāṣyabhūmikā : Sāyaṇa : With Hindi Translation and Commentary by Prof. V.K. Varma

- R̥gvedabhāṣyabhūmikā : Sāyaṇa : With Hindi Translation and Commentary by Pt. Ramavadha Pandey, MLBD, Varanasi
- Vedabhāṣyabhūmikāsamgraha - Sāyaṇa, Chowkhamba, Varanasi
- Vaidika Sahitya aur Sanskriti : Pt. Baladev Upadhyaya
- History of Indian Literature Vol. I, Part I, M. Winternitz.
- A History of Sanskrit Literature : A.A. Macdonell
- <http://ancientindianwisdom.com>, Jijyasa Foundation, Florida, USA: Several articles by Korada Subrahmanyam
- Śabarabhāṣyam, Viveka Hindi Commentary, Chaokhamba, Varanasi
- Brahmaśtraśamkarabhāyam, Motilal Banarassidas, Delhi

3.1.2 SK402 Scientific Literature in Ancient India

1. Art of writing and script
Historical antiquity, writing material, paleographical aspects, manufacturing of paper and ink
2. Architecture and Sculpture
Temple architecture, Saiva, Pancaratra, Vaikhanasa agamas, Different time periods, Schools of Art
3. Military science
Indian tradition of Naval power, Divisions of the army, Vyuhas in Mahabharata and Arthashastra, Ancient archery, classification of weapons, Fire arms and Gun powder, Astras
4. Agriculture and Botany
Types and sub-types of land, Plant classification, Seed preservation-seed sowing-seed collection methods, Pest repellent techniques, Kunapajala, Crop management, Water conservation, Sthavara-Jangama, Life in plants, Plant physiology and morphology, Tridosha in plants, Suction force theory, Treatment of plant diseases
5. Political Science and Economics
Concept of State and Political Theory, Formation of Government and Ministries, Law, Governance and Social welfare, Foreign Policy and External Affairs, Governance and Conduct, Artha – Wealth, Vaartaa, Trade, Business and Labor, Audit, Animal Husbandary

6. Engineering and Metallurgy
Iron and steel technology, Non-rusting techniques, manufacturing iron in central and south India, Method of making mortar, Town planning and municipal management, Social welfare and Security
7. Alchemy and Chemistry
Metals and minerals, Purification techniques of mercury, Conversion of lower metals to noble metals – lohavedha, use of metals in medicinal preparations, Chemicals and Alkalis, Various distillates, Chemical compounds, Pilupaaka-vaada and Pitharapaaka-vaada
8. Astronomy and Mathematics
Helio-centric system, Calculation and occurrence of eclipses, theory of gravitation, Hindu calendar, Observatories and Sun dials, Concept of zero in Mathematics vis-a-vis Vedanta, Vedicmathematics: Sulbasutras, Decimal and Arithmetic, Algebra, Katapayadi, Calculus
9. Logic and Scientific Method
Perception, Observation and Experiment, Fallacies in observation, Pramanas, Invariable concomitance, Causal relation, Tarka, The scientific method as applied to therapeutics, The scientific method as applied to grammar and philology
10. Medicine, Physiology and Biology
Human constitution, Chemistry of digestion, Nervous system, Foetal development, Health and Disease, Health and Wellbeing, Food and psyche, Plant, mineral and metal preparations, Specilized branches of medicine, Mental health, Psychology and Yoga

Text Books:

- The Positive Sciences of the Ancient Hindus by BN Seal
- India's Glorious Scientific Tradition by Suresh Soni

Reference Books:

- Pride of India by Samskrita Bharati
- Science and Technology in 18th Century by Dharampal
- Hindu Superiority by Har Bilas Sarda
- Cultural Foundations of Mathematics by CK Raju

- Is science Western in Origin? by CK Raju
- The Foundations of Science: Missing Parameters by Arthur M. Young
- Hindu Achievements in Exact Science by Benoy Kumar Sarkar, Longmans, Green & Co, 1918
- History of Hindu Mathematics by B Datta & A N Singh, Asta Publishing House

Subject specific reference books:

A history of Hindu Chemistry by Prafulla Chandra Ray, Vol I, The Bengal Chemical and Pharmaceutical Works, 1902

3.1.3 SK403 Vyākaraṇa and Linguistics

- Saṁjñā prakaraṇa
- Paribhāṣā prakaraṇa
- Ac-Sandhi prakaraṇa
- Kāraka prakaraṇa
- Phonology, Phonetics
- Paninīya śikṣā

Reference Material:

1. Sidhānta Kaumudi, Choukhamba Surabharati Prakashan, Varanasi.
2. Sidhānta Kaumudi, Choukhamba Orientalia, Delhi.
3. Siddhānta Kaumudi, (Ed) S. R. Ray, Sanskrit Pustak Bhandar, Kolkata
4. Phonetics in Ancient India, W S Allen, London Oriental Series, London, Oxford University Press, 1953.
5. Saṁskṛta Vyākaraṇa śāstra kā itihāsa, Yudhishtira Mimamsak, Ramlal Kapur Trust, Sonapat 2016
6. Natural Language Processing: Paninian Perspective, Akshar Bharati, Vineet Chaitanya, Rajeev Sangal, Prentice Hall of India, 1994

3.1.4 SK404 Sanskrit Literature

- Selected portions from 3-4 works such as Raghuvamṣa, Meghadūta, śiśupālavadhā, Naidsadhīyacaritam
- Selected portions from Daśakumāracarita, Kādambārī
- Selected portions from Abhijñāna-śākuntala, Mṛcchakaṭika, uttararāmacarita, ...

For semester 2019-20 following parts will be taught.

- Raghuvamsha of Kalidasa, 1st Canto (Poetry) - 10 classes,
- Sishupalavadha of Magha, 1st Canto (Poetry) - 10 classes,
- Dasakumaracharita of Dandi, VIIIth (Prose) - 10 classes,
- Swapnavasavadatta of Bhasa (Drama), - 10 classes,

References:

1. Raghuvamsa, Chaukhamba Surabharati Prakashan, Varanasi.
2. Raghuvamsamahakavyam, Bharatiya Vidya Prakashan, Varanasi.
3. Sishupalavadha, Chaukhamba Surabharati Prakashan, Varanasi.
4. Dasakumaracharita, Bharatiya Vidya Samsthan, Varanasi.
5. Swapnavasavadatta, Chaukhamba Surabharati Prakashan, Varanasi.

3.2 Semester-II

3.2.1 SK411 Vedāᅅgas

- Brief introduction to the 6 vedāᅅgas and their content
- Śikṣā: Various Śikṣā granthas, their relevance for Vedic studies, Pāᅇinīya śikṣā in detail.
- Kalpa: Rituals, The science of rituals
Geometry:
 - construction of a square,
 - squaring a circle,

- drawing a circle with area approximately equal to a square,
- Baudhāyana sūtra (pythagorus theorem)
- finding the square and cube root
- concept of approximation, and converging series
- construction of Śyena citi
- pointers to diophantine equations

Numbers and Infinity

- Vyākaraṇa: Paśpaśāhnika of Mahābhāṣya
- Nirukta: First chapter of Yāska
- Chanda: Introduction to Chandaśāstra,
 - study of following chandas:
Indravajrā, upendravajrā, vamsastha, drutavilambita, vasantatilakā, mālinī, śikhariṇī, mandākrāntā, śārdulavikrīdita, bhujamṅgaprayāsa
 - various classifications of Chanda: akṣara, gaṇa, mātrā
 - 6 pratyayas: prastāra, naṣṭa, uddiṣṭa, eka-dvi-ādi-l-g-kriyā, samikhyā, adhvayoga, patākā
 - Piṅgala’s sūtras (recursive algorithms) for them
 - Kedāra Bhaṭṭa’s śloka (iterative algorithms) for the same

References:

- Paspasāhnika : Prof. J.S.L. Tripathi, Chaukhamba
- Piṅgala’s Chandaśāstra, Parimal Prakashan
- Vṛttaratnākara, Motilal Banarasidass, Delhi
- Computing Science in Ancient India, T R N Rao and Subhash Kak
- Chāra Śūlbāsūtra, R. P. Kulkarni, Maharshi Sandipani Vedavidya Pratisthan, Ujjain, 2003
- Yask’s Nirukta
- Indian Semantic Analysis: The Nirvacana Tradition. Cambridge University Press, Eivving Kahrs (1998)

3.2.2 SK412 Elements of Darśanas and Ontology

- Tarkasaṅgraha of Annambhaṭṭa
- Sāṅkhya kārīkās (1 to 42)
- Yogadarśana - first and second chapters
- Western Ontology, Web Ontology

Reference Material:

- Tarkasaṅgraha of Annambhaṭṭa, V N Jha, Chinmaya International Foundation, 2015
- Treatise on Basic Philosophy - Ontology I by Mario Bunge, Springer
- SāṅkhyatatvaKaumudi, Chaukhamba series, Varanasi
- Yogasūtrabhāṣyam, Chaukhamba series, Varanasi
- Ontological foundations of Information Systems by Ron Webber

3.2.3 SK413 Vyākaraṇa

- Samāsa Prakaraṇa (Avyayībhāva and Tatpuruṣa)
- Kṛtya and Pūrva Kṛta prakaraṇas
- Samarthāhnikā from Mahābhāṣya

Reference Material:

- Samarthāhnikā, S D Joshi, CISS, Pune
- Mahābhāṣya of Patañjali
- Siddhānta Kaumudi

3.2.4 SK414 Sanskrit Poetics:

- Kāvya prakāṣa: 1,2,3 and 10th Ullāsas
- Dhvanyāloka: 1st and 2nd Udyotas

Reference Material:

- Kāvyaṣṙakāṣā : Mammaṭa, Translated by Vishveshvara Siddhantashiro-
mani, Jñānamanḁala
- Kāvyaṣṙakāṣā : Mammaṭa (text only), Ed. Prof. Rewa Prasad
Dwivedi, Pub.: BHU
- Kāvyaṣṙakāṣā : Mammaṭa, With the commentaries Pradīpoddyota
and Prabhā, Ed. Prof. B. Bhattacharya and Prof. J.S.L. Tripathi,
BHU Publication
- History of Poetics by P V Kane
- History of Poetics by S K Dey
- Dhvanyāloka with Locana commentary: Chaukhamba series, Varanasi
- Kāvyaṣṙakāṣā: Chaukhamba series, Varanasi

3.3 Semester III

Core Courses

3.3.1 SK504 Indian Research Methodology

- Foundations of research
- Problem identification and formulation
- Research design
- Qualitative and quantitative models
- Collection and analysis of data
- Presentation of research

Reference Material:

- Research Methodology – Methods and Techniques, Kothari C.R., New
Age International Publishers

Optional Courses:

3.3.2 SK502 Introduction to Sanskrit Computational Linguistics -I

At the end of this course the students should be able to assess our traditional linguistic resources vis-a-vis the modern linguistic resources, also compare the relevance of fundamental principles and concepts in Indian traditional theories to the modern languages.

1. Introduction to NLP
2. Finite State Automata
3. Word Generators and Analysers
4. Local Word Grouper and Chunkers
5. Pāṇinian Parser
6. Lexical Resources: with special refernce to their content, structure and purpose.
Resources built in Indian Tradition: nirukta, nighaṇṭu, kośas such as Amarakośa, vācaspatyam, etc.
Modern resources: WordNet, FrameNet, VerbNet
7. Generation

Recommended Books:

1. NLP: A Paninian Perspective by Akshar Bharati, Vineet Chaitanya, Sangal, Prentice Hall of India, 1995
2. Speech and Language Processing By Daniel Jurafsky and James H Martin
3. Relevant research papers in the field of Machine Translation, Natural Language Processing, Computational Linguistics, Sanskrit Computational Liguistics, etc.

3.3.3 SK503 Computational Aspects of Aṣṭādhyāyī

- Structure of Aṣṭādhyāyī
- Algorithms for deriving word forms: nouns, verbs and derivational stems
- Anuvṛtti

- Syntax of rules
- Rule ordering, rule interaction, rule selection in Aṣṭādhyāyī
- Information coding and Aṣṭādhyāyī

Reference Material

- Sanskrit Computational Linguistics Proceedings 1&2, Sprintger Verlag, 2008
- Sanskrit Computational Linguistics Proceedings 3, Sprintger Verlag, 2009
- Sanskrit Computational Linguistics Proceedings 4, Sprintger Verlag, 2010
- Aṣṭādhyāyī of Pāṇini
- Aṣṭādhyāyī Prathamāvṛtti, Yudhiṣṭhira Mīmāṃsaka, Sonapat

3.3.4 Introduction to Āyurveda

- Āyurvediya Siddhānt and itihāsa
- Bṛhatrayi
- Padārtha Vijñān
- Metaphysics and Epistemology in Āyurveda
- Dravya Guṇa Vijñān
- Rasaśāstra tradition
- Āyurvedic physiology
- Āyurvedic psychology

Reference Material:

1. Vedomeṃ Āyurveda, Dr. Kapil Dev Dwivedi
2. Upodghāta of Kāśyapasaṃhitā, Rajguru Hem Raj Sharma
3. Kāya Cikitsā Paricaya - Dr. C. Dwarkanath

4. Saṁskṛta Āyurved Sudhā- Dr. Banwari Lal Gaur
5. Luminaries of Indian Medicine, Dr. K.R. Shrikanta Murthy
6. Classical Doctrine of Indian Medicine, Dr. Filiozat

3.3.5 Introduction to Indian Psychology

- Concept of manas in Vedas, Upanishads and Gita
- Concept of manas in Darshanas
- Concept of manas in Ayurveda
- Concept of manas in Yoga
- Functioning of manas in Sankhya
- Theology, philosophy and psychology
- Manas in health and disease
- Eastern and Western perspectives on mind

Reference Material:

1. Spirituality and Indian Psychology lessons from the Bhagvadgeeta, Dharm P.S. Bhawuk, Springer 2011
2. Source book of Ancient Indian psychology, Prof. B. Kuppaswami, Konark Publishers Pvt. Ltd., Delhi 1993
3. Development of psychological thoughts in India, S.K. Ramchander Rao, Mysore kavalaya Publishers 1962
4. Indian Psychology Cognition-1 & 2, Prof. Jadunath Sinha 1958
5. Indian Psychology Perception, Prof. Jadunath Sinha KEGAN PAUL, TRENCH, TRUBNER & Co. Ltd, 1934 (*CHK)

3.3.6 Health Humanities

- History and Philosophy of Medicine
- Bio-Ethics
- Sociology of Medicine/Health
- Public Discourses on Health & Medicine
- Medicine in Literature/Linguistics
- Medico-Philosophical Dimension of Indian Culture
- Explicit and Implicit medical references in texts
- Medical narratives

Reference Material:

1. Physician and Philosopher — The Philosophical Foundation of Medicine: Essays by Dr. Edmund Pellegrino, Carden Jennings Pub. Co., 2001
2. Philosophy of medicine and science: Problems and Perspectives, Dept. of Philosophy of Medicine and Science, Institute of History of Medicine and Medical Research, Tughlaqabad, New Delhi , 1972
3. Medicine as an art and a science - Archibald Edmund Clark-Kennedy, Christopher William Bartley, Lippincott, 1960
4. Space, Time, & Medicine, Larry Dossey, Shambhala, 1982
5. Somatic Lessons: Narrating Patient hood and Illness in Indian Medical Literature, Anthony Cerulli, NY 2012
6. Sociology of Health and Medicine, V. Sujatha, Orient Blackswan

3.3.7 Arthaśāstra

3.3.8 Law and Jurisprudence

3.3.9 Ancient Indian Mathematics - I

- Algebra and Geometry from Līlāvati
- Solutions of linear Diophantine equations: Kuṭṭaka method

- continued fractions
- Simultaneous linear indeterminate equations
- Calculus

Reference Material:

1. Lilāvati of Bhāskarāchārya
2. Recent research papers

3.3.10 SK501 Indian Philosophy - I

- Introduction to Indian philosophy
- Vedic Period
 - The Pre-upanishadic thought
 - The upanishadas
- The early Post-vedic Period
 - Epic philosophy
 - Cārvāka
 - Jainism
 - Buddhism
- Six schools
 - Nyāya-Vaiśeṣika
 - Sāṃkhya-Yoga
 - Pūrva-mīmāṃsā
 - Vedānta: various schools
 - * Śaṅkara, Rāmānujāchārya, Mādhavāchārya
 - * Śaiva, śākta, later Vaiṣṇava

Reference Material:

1. M. Hiriyanna - Outlines of Indian Philosophy, MLBD, New Delhi.
2. Max Muller - Six Systems of Indian Philosophy, New Delhi.

3. S.N. Dasgupta - History of Indian Philosophy, Vols. I-V, MLBD, New Delhi
4. Sarvadarśanasāṅgraha, Mādhavāchārya, Anand Ashram, Pune
5. Sarvadarśanasāṅgraha, Mādhavāchārya, (ed.) Madan Mohan Agrawal, Chaukhamba Surabhārati Prakashan, Delhi
6. Indian Philosophy Vol. I & II, S. Radhakrishnan, Oxford, University Press.
7. Philosophy of Advaita, Mahadevan T.M.P., Bhartiya Kala Prakashan, Delhi, 2006
8. Outline of History of Shaiva Philosophy, Pandey Kanti Chandra, MLBD, Delhi, 1986

3.4 Semester IV

Core courses:

3.4.1 Philosophy of Language:

- Nature of language
- Language and reality
- Language and thought
- Theories of meaning
- Discourse analysis
- Language and paleography

Reference Material:

- Vakyapadiya (Eng. tr.) K.A.S. Iyer, Pune: Deccan College, 1965.
- Mahabhashya (Eng. tr.) S.N. Dasgupta, Delhi: Indian Council of Philosophical Research, 1991.
- Gauri Nath Shastri, Philosophy of Word and Meaning, Calcutta: Sanskrit College, 1959.

- Paramalaghumanjusha (Hindi tr.) Acharya Lokamani Dahal, Varanasi: Chowkhamba Sanskrit Pratishtan, 1959.
- K. Kunjunni Raja, Indian Theories of Meaning, Madras: Adyar Library and Research Centre, 1963.
- B.K. Matilal, The Word and the World (India's contribution to the study of language), Delhi: Oxford University Press, 1992.

References

Optional courses:

3.4.2 Introduction to Sanskrit Computational Linguistics -II

Objective: At the end of this course the students should be able to assess our traditional linguistic resources vis-a-vis the modern linguistic resources, also compare the relevance of fundamental principles and concepts in Indian traditional theories to the modern languages.

- Corpus Linguistics
- Corpus, collection, Digital Resources
- Word Sense Disambiguation: Problems, Various approaches
- Various Sanskrit Koshas, Amarakosha: Knowledge Structure
- Electronic dictionaries and their linking
- E-lexicons: WordNet, ConceptNet, PropNet, VerbNet, Lakshan Charts, Kāraka Charts

Reference Books:

1. Speech and Language Processing By Daniel Jurafsky and James H Martin
2. Amarakoṣa: Sudhā Vyākhyāna
3. Nirukta: durgā vyākhyā,
4. Nirukta: lakṣmaṅsarupa
5. Lexicography: Rama-dhara Simha
6. Relevant research papers
7. Online Lexical resources and their Documentation

3.4.3 Navya Nyāya Techniques and Methodology

- Introduction to the Navya Nyāya technical terms
- relation, abhāva, avacchedaka, nirūpaka, relational abstracts
- saṁsarga vidhayā and prakāra vidhayā anugama
- various concepts such as vyāpti, anvaya, vyatireka, lakṣaṇa
- Siddhānta-lakṣaṇa-vyāpti

Reference Material:

1. Relations by V N Jha
2. Viśayatāvāda by V N Jha
3. Towards a formal regimentation of the Navya-Nyāya Technical Language-I, in Logic Navya-Nyāya and Applications, by Jonardan Ganeri
4. Some features of the Technical Language of Navya-Nyāya, in Philosophy East and West, by Sibajiban Bhattacharya
5. Māthurīpañcalakṣaṇī by Badarīnātha Śukla

3.4.4 Philosophy of Science

- History of science in east and west
- Nature of science; Logical Positivist View, The Historical View of Science
- Goal and procedure of science
- The method of science
- Vedic sciences
- Karl Popper's scientific methodology
- Conceptual issues in the world of science
- Inter junction of science and philosophy

Reference Material:

1. Conjectures and Refutations: The Growth of Scientific Knowledge, Popper, K. R., Routledge 1989
2. Philosophy of Science, Fetzer, James H., New York: Paragon House, 1993
3. The Structure of Scientific Revolution, Kuhn, Thomas, Chicago, 1962.
4. Critical Issues in the Philosophy of Science and Religion, Perumalil Augustine, ISPCK, Delhi: 2006
5. Methods of Science, Kulkarni S.G., Research Methodology in Social Sciences, Eds. S. Satynarayan et al. Mumbai: Himalaya Publishing, 1998
6. Monographs by PHISPC

3.4.5 Philosophy of Mind

- Mind in Indian literature
- Mind-body dualism
- Psycholinguistics
- Psychosemantics
- Foundations of cognitive sciences

Reference Material:

1. David Chalmers, Philosophy of Mind, Classical and Contemporary Readings
2. Howard Gardner, Cognitive Science: The First Decades, Chapter three of The Mind's New Science (Historical and Methodological issues)
3. John Haugeland, Semantic Engines, Introduction to Mind Design I, Edited by Haugeland

3.4.6 Medical Concepts in Sanskrit Literature

- Language, Philosophy and Medicine
- Āyurveda as a philosophy
- Āyurveda as a medical system
- Medical concepts in Pañca-mahā-kāvyaś
- Medical concepts in Purāṇas (selected)
- Medical concepts in Arthaśāstra
- Medical concepts in Smṛtis

Reference Material:

1. Samskr̥ta Sāhitya meṁ Āyurveda, Atridev Vidyalankar, Arya Samaj, Delhi 1956
2. Āyurvedic References in Pañca-mahā-kāvyaś
3. Āyurvedic References in Artha śāstra
4. Selected published papers

3.4.7 Management

3.4.8 Ancient Indian Mathematics - II

- Kerala School of Mathematics and Calculus
- Details to be added

Reference Material:

1. TOADD

3.4.9 Discourse Analysis in Sanskrit

- What is discourse analysis?
- Pada-vākya-pramāṇa śāstras
- Theories of śābdabodha - Concepts of ākāṅkṣā Yogyatā

- Śaktigraha, Tātparya and Mahāvākya
- Criteria of discourse - Vākya and mahāvākya
- Contextual factors of meaning
- Concept of saṅgati and its importance in understanding the texts
- Various saṅgatis in Indian Tradition
- Western theories of discourse analysis

Reference Material:

1. K. Kunjunni Raja, Indian theories of Meaning, The Adyar library and Research centre, Madras 1969
2. Bimal Krishna Matilal, The Word and the World, Oxford University Press, Delhi, 1990
3. Veluri Subba Rao , The Philosophy of a Sentence and it's Parts, Munishiram Manoharlal Oriental Publishers, Delhi, 1969
4. Tandra Patnaik, SABDA- A Study of Bhartrhari's Philosophy of Language, D.K. Print world, New Delhi, 1994.
5. N.S. Ramanuja Tatacharya, Shabdabodha mimamsa, Institute francains de pondichery, 2006
6. K. Subrahmanyam, Mahāvākya vicārah
7. The meaning of meaning – I.A. Richards
8. Relevant parts from śabara bhāṣya
9. Discourse analysis of Sanskrit texts: first attempt towards computational processing, Ph.D. thesis by Monali Das

3.4.10 IT-Lab: A Bridge course for Computer awareness

Objective: The goal of this course is to introduce the students to various Unix tools and scripting languages so that students can develop small interfaces on the top of existing tools, process corpus, do preliminary linguistic and statistical analysis of the corpus.

- Introduction to Unix file system

- Introduction to various Unix tools such as cut, paste, more, less, tr, diff, comm, locate, find
- regular expressions grep, sed, flex (lexical analyser)
- Simple shell programmes command line arguments, loop, conditional statements
- Introduction to HTML, and XML
- Introduction to Apache, server programming
- Introduction to java script
- Philosophy behind GPL, Creative Commons and similar licences

Recommended Books:

1. Unix Power Tools, by Jerry Peek, Shelley Powers, Tim O'Reilly, Mike Loukides
2. Online tutorials for Apache, HTTP and Javascript
3. Java Script Web Applications: O' Reilley