

SANSKRIT AS MAJOR

DSC-5: Sanskrit Theatre

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Prerequisite of the course
		Lecture	Tutorial	Practical/ Practice		
(Discipline A-3) Indian Theatre	04	3	1	0	Semester II Passed	Working Knowledge of Sanskrit

Learning Objectives

With its audio-visual characteristics, drama is considered to be the best among all forms of arts. The history of theatre in India is very old and the glimpses of the Theatre can be finding in the hymns of Rigveda. The dramaturgy was later developed by Bharat. The objectives of this curriculum are to help the students to identify the richness of drama and to become aware of the classical aspects of Theatre.

Learning outcomes

After going through this course students will be able to know about several theoretical aspects of theatrical performance and production. They will become aware of the many types of theatres, their design and stage setting, acting, dress and makeup etc. Students also become familiar with the main principals of theatre performance and appreciation.

Detailed Syllabus

Unit I	15Hrs
Origin and development of stage in different ages: Pre-historic, Vedic age. Epic-puranic age	
Unit II	12Hrs
Theatre: Types and Constructions	
Unit III	10Hrs
Drama: Subject-Matter (vastu), Acting: Āṅgika, Vācika, Sāttvika and Āhārya	
Unit IV	08Hrs
Actor (netā), <i>Rasa</i> (Sentiment)	

Essential/recommended readings

1. नाट्यशास्त्रम्, (सम्पा. एवं व्या.) डा. पारसनाथ द्विवेदी, सम्पूर्णानन्दसंस्कृतविश्वविद्यालय, वाराणसी।
2. राधावल्लभ त्रिपाठी (सम्पा. एवं संक.), संक्षिप्तनाट्यशास्त्र हिन्दी भाषानुवादसहित, वाणी प्रकाशन दिल्ली 2008
3. राधावल्लभ त्रिपाठी, भारतीय नाट्यः स्वरूप एवं परम्परा, संस्कृत परिषद्, सागर मध्य प्रदेश 1988
4. हजारी प्रसाद द्विवेदी (सं.), नाट्यशास्त्र की भारतीय परम्परा एवं दशरूपक, राजकमल प्रकाशन, दिल्ली 1963
5. सीताराम झा, नाटक और रंगमंच, बिहार राष्ट्रभाषा परिषद् पटना 1982
6. बाबूलाल शुक्ल शास्त्री (सम्पा.), नाट्यशास्त्र (1-4 भाग), चौखम्भा संस्कृत संस्थान, वाराणसी, 1984
7. राधावल्लभ त्रिपाठी, नाट्यशास्त्र विश्वकोश (1-4 भाग), प्रतिभा प्रकाशन दिल्ली 1999
8. राधावल्लभ त्रिपाठी, भारतीय नाट्यशास्त्र की परम्परा और विश्व रंगमंच, प्रतिभा प्रकाशन दिल्ली।
9. ब्रजमोहन चतुर्वेदी, नाट्यशास्त्रम्, विद्यानिधि प्रकाशन दिल्ली, 2003
10. केशवरामुसलगांवकर, संस्कृत नाट्य मीमांसा, परिमल प्रकाशन, दिल्ली ।
11. शिवशरण शर्मा, आचार्य भरत, मध्य प्रदेश हिन्दी ग्रन्थ अकादमी, भोपाल ।

Suggested Readings:

1. रामलखन शुक्ल, संस्कृत नाट्य कला, मोतीलाल बनारसीदास, नई दिल्ली, 1970
2. गोविन्द चन्द्र राय, नाट्यशास्त्र में रंगशालाओं के रूप, काशी, 1958
3. भानुशंकर मेहता, भरत नाट्यशास्त्र तथा आधुनिक प्रासंगिकता, वाराणसी ।
4. वाचस्पति मेहता, भारतीय नाट्य परम्परा एवं अभिनयदर्पण, इलाहाबाद, 1967
5. लक्ष्मी नारायण लाल, रंगमंच और नाटक की भूमिका, दिल्ली, 1965
6. लक्ष्मी नारायण गर्ग, भारत के लोकनाट्य, हाथरस संगीत कार्यालय, 1961
7. सीताराम चतुर्वेदी, भारतीय तथा पाश्चात्य रंगमंच, हिन्दी समिति, लखनऊ 1964
8. जगदीशचन्द्र माथुर, परम्पराशील नाट्य, बिहार राष्ट्रभाषा परिषद्, पटना, 1961
9. C.B. Gupta, Indian Theatre, Varanasi, 1954.
10. R.K. Yajnick, Indian Theatre, London, 1933.
11. Tarla Mehta, Sanskrit Play Production in Ancient India, MLBD, Delhi, 1999.
12. Allardyce Nicoll, The Theatre and Dramatic Theory, London, 1962.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

DSC-6: Gītā and Upaniṣad

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Prerequisite of the course
		Lecture	Tutorial	Practical/ Practice		
(Discipline B-3) Gītā and Upaniṣad	04	3	1	0	Semester II Passed	Working Knowledge of Sanskrit

Learning Objectives

Objective of this course is to get students to know about the principle thesis of the Gītā and the Upaniṣad.

Learning outcomes

The course will enable the students to familiarize themselves with the II Chapter of the Gita and the general introduction to Upaniṣad philosophy. After the completion of this course the learner will be exposed to the Philosophy of Gita and Upaniṣad.

Detailed Syllabus

Unit I 12Hrs

General introduction to Philosophy of Gita:

Jnana Yoga, Karmayoga and Bhakti Yoga.

Gītā: Chapter Two – (Verse: 09-30)

Nature of Atman, (Text Reading, Grammar, Translation, Explanation, Question based on Shlokas)

Unit II 12Hrs

Gītā: Chapter Two – (Verse: 31-54)

Karmyog, (Text Reading, Grammar, Translation, Explanation, Question based on Shlokas)

Gītā: Chapter Two – (Verse: 55-68)

Sthitaprajya, (Text Reading, Grammar, Translation, Explanation, Question based on Shlokas)

Unit III 09Hrs

General Introduction to Upaniṣadic Philosophy

General Introduction to Upaniṣadic Philosophy: ātman, brahman, īśvara, karma, sṛṣṭi.

Unit IV 12Hrs

Upaniṣad: Īśāvāsyopniṣad

Text Introduction to Īśāvāsyopniṣad

Text Reading of Īśāvāsyopniṣad

Essential/recommended readings

1. भगवद्गीता, शाङ्करभाष्य अनुवाद सहित, अनुवादक- श्री हरिकृष्णदास गोयन्दका, गीता प्रेस गोरखपुर।
2. गीताभाष्यनवाम्बरा, डा. शिवनारायण शास्त्री।
3. श्रीमद्भगवद्गीता, साधकसञ्जीवनी टीका, रामसुखपरमदास, गीताप्रअस गोरखपुर।
4. हनुमान प्रसाद पोद्दार (सम्पादक), ईशावास्योपनिषद्, गीताप्रेस गोरखपुर ।
5. शिवनारायण शास्त्री (व्या), ईशावास्योपनिषद्, परिमल प्रकाशन, दिल्ली, 1996 ।
6. शशि तिवारी, ईशावास्योपनिषद्: भूमिका एवं व्याख्या, भारतीय विद्या प्रकाशन, दिल्ली,
7. Radhakrushana, Gītā.
8. Gītā with Hindi Translation, Gita Press, Goraphpur

Suggested Readings:

1. राजबली पाण्डेय, हिन्दू संस्कार ।
2. पी.बी. काणे, धर्मशास्त्र का इतिहास (खण्ड-I) ।
3. भारतीय दर्शन, आचार्य बलदेव उपाध्याय, चौखम्भा ओरियण्टलिया, वाराणसी।
4. भारतीय दर्शन की रूपरेखा, आचार्य बलदेव उपाध्याय, चौखम्भा ओरियण्टलिया, वाराणसी।
5. भारतीय दर्शन का इतिहास, डा. एस. एन. दासगुप्त, राजस्थान हिन्दी ग्रन्थ अकादमी।
6. Rajbali Pandey, Hindu Samskar.
7. शिवदत्त ज्ञानी, भारतीय संस्कृति ।
8. Allardyce Nicoll, the Theatre and Dramatic Theory, London, 1962.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

SANSKRIT AS MINOR

DSC-3: Sanskrit Theatre

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the Course			Eligibility criteria	Prerequisite of the course
		Lecture	Tutorial	Practical/ Practice		
(Discipline A-3) Indian Theatre	04	3	1	0	Semester II Passed	Working Knowledge of Sanskrit

Learning Objectives

With its audio-visual characteristics, drama is considered to be the best among all forms of arts. The history of theatre in India is very old and the glimpses of the Theatre can be find in the hymns of Rigveda. The dramaturgy was later developed by Bharat. The objectives of this curriculum are to help the students to identify the richness of drama and to become aware of the classical aspects of Theatre.

Learning outcomes

After going through this course students will be able to know about several theoretical aspects of theatrical performance and production. They will become aware of the many types of theatres, their design and stage setting, acting, dress and makeup etc. Students also become familiar with the main principals of theatre performance and appreciation.

Detailed Syllabus

Unit I	15Hrs
Origin and development of stage in different ages: Pre-historic, Vedic age. Epic-puranic age	
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Theatre: Types and Constructions	
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Drama: Subject-Matter (vastu), Acting: Āṅgika, Vācika, Sāttvika and Āhārya	
Unit IV	08Hrs
Actor (netā), <i>Rasa</i> (Sentiment)	

Essential/recommended readings

1. नाट्यशास्त्रम्, (सम्पा. एवं व्या.) डा. पारसनाथ द्विवेदी, सम्पूर्णानन्दसंस्कृतविश्वविद्यालय, वाराणसी।
2. राधावल्लभ त्रिपाठी (सम्पा. एवं संक.), संक्षिप्तनाट्यशास्त्र हिन्दी भाषानुवादसहित, वाणी प्रकाशन दिल्ली 2008
3. राधावल्लभ त्रिपाठी, भारतीय नाट्यः स्वरूप एवं परम्परा, संस्कृत परिषद्, सागर मध्य प्रदेश 1988
4. हजारी प्रसाद द्विवेदी (सं.), नाट्यशास्त्र की भारतीय परम्परा एवं दशरूपक, राजकमल प्रकाशन, दिल्ली 1963
5. सीताराम झा, नाटक और रंगमंच, बिहार राष्ट्रभाषा परिषद् पटना 1982
6. बाबूलाल शुक्ल शास्त्री (सम्पा.), नाट्यशास्त्र (1-4 भाग), चौखम्भा संस्कृत संस्थान, वाराणसी, 1984
7. राधावल्लभ त्रिपाठी, नाट्यशास्त्र विश्वकोश (1-4 भाग), प्रतिभा प्रकाशन दिल्ली 1999
8. राधावल्लभ त्रिपाठी, भारतीय नाट्यशास्त्र की परम्परा और विश्व रंगमंच, प्रतिभा प्रकाशन दिल्ली।
9. ब्रजमोहन चतुर्वेदी, नाट्यशास्त्रम्, विद्यानिधि प्रकाशन दिल्ली, 2003
10. केशवरामुसलगांवकर, संस्कृत नाट्य मीमांसा, परिमल प्रकाशन, दिल्ली ।
11. शिवशरण शर्मा, आचार्य भरत, मध्य प्रदेश हिन्दी ग्रन्थ अकादमी, भोपाल ।

Suggested Readings:

1. रामलखन शुक्ल, संस्कृत नाट्य कला, मोतीलाल बनारसीदास, नई दिल्ली, 1970
2. गोविन्द चन्द्र राय, नाट्यशास्त्र में रंगशालाओं के रूप, काशी, 1958
3. भानुशंकर मेहता, भरत नाट्यशास्त्र तथा आधुनिक प्रासंगिकता, वाराणसी ।
4. वाचस्पति मेहता, भारतीय नाट्य परम्परा एवं अभिनयदर्पण, इलाहाबाद, 1967
5. लक्ष्मी नारायण लाल, रंगमंच और नाटक की भूमिका, दिल्ली, 1965
6. लक्ष्मी नारायण गर्ग, भारत के लोकनाट्य, हाथरस संगीत कार्यालय, 1961
7. सीताराम चतुर्वेदी, भारतीय तथा पाश्चात्य रंगमंच, हिन्दी समिति, लखनऊ 1964
8. जगदीशचन्द्र माथुर, परम्पराशील नाट्य, बिहार राष्ट्रभाषा परिषद्, पटना, 1961
9. C.B. Gupta, Indian Theatre, Varanasi, 1954.
10. R.K. Yajnick, Indian Theatre, London, 1933.
11. Tarla Mehta, Sanskrit Play Production in Ancient India, MLBD, Delhi, 1999.
12. Allardyce Nicoll, The Theatre and Dramatic Theory, London, 1962.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

Pool of Discipline Specific Electives

DSE-1: Indian System of Logic and Debate

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the Course			Eligibility criteria	Prerequisite of the course
		Lecture	Tutorial	Practical/ Practice		
Indian System of Logic and Debate	04	3	1	0	Semester II Passed	Working Knowledge of Sanskrit

Learning Objectives

This course aims at getting the students acquainted with the fundamental Indian principles of debate and its applications, not just in the philosophical discourse, but also in every area of knowledge. The course intends to bring the indigenous science of argumentation to the fore. It also intends to help the students develop logical faculty of discourse mind and to perceive the world in a more rational way in their day-to-day life situations.

Learning outcomes

At the end of this course, the learners will be able to form a comprehensive idea about different levels, layers and components of Indian science of debate .

Detailed Syllabus

Unit I

12Hrs

Fundamentals of the Science of Debate

Science of inquiry (Anvīkṣikī) & its importance, Growth of Anvīkṣikī into the art of Debate, The council of debate (Paṇḍita) & its types, Discussant (Vādī), Opponent (Prativādī), Madhyastha (Judge) and Prāśnika.

Note: The definitions and concepts are to be taken from *Nyāyasūtra*, *Nyāyakośa* of Bhimacharya Jhalkikar and *A History of Indian Logic* by S. C. Vidyabhushan, Chapter III of Section I.

Unit II

12Hrs

Syllogistic Logic

Inference (Anumāna) & its key terms, viz. major term or probandum (Sādhya), middle term or probans (Hetu), minor term (Pakṣa), illustration (Sapakṣa), contrary-illustration (Vipakṣa), basic understanding of invariable concomitance (Vyāpti) & its types, establishing Vyāpti through inductive method, demonstration of pervasion- Upādhi and Tarka, nature and variety of Tarka, Pañcāvayava-vākya.

Note: The definitions and concepts are to be taken from the *Tarkasaṃgraha*, *Tarkabhāṣā* and the *Nyāya Theory of Knowledge* by S. C. Chatterjee, Chapters XI-XIV.

Unit III**09Hrs****Theory of Debate**

Basic understanding of the following terms: Example (Dṛṣṭānta), Tenet (Siddhānta), Ascertainment (Nirṇaya), Dialogue (Kathā) and its kinds, Discussion (Vāda), Wrangling (Jalpa), Cavil (Vitaṇḍā).

Unit IV**12Hrs**

Quibble (Chala) & its kinds; Analogue (Jāti), Point of defeat (Nigrahasthāna) & its kinds- Hurting the proposition (Pratijñāhāni), Shifting of proposition (Pratijñāntara), Opposing the proposition (Pratijñāvirodha), Renouncing the Proposition (Pratijñāsannyāsa), Admission of an opinion (Matānujñā).

Note: The definitions and concepts are to be taken from the Nyāyasūtra, Nyāyakośa by Bhimacharya Jhalkikar and A History of Indian Logic by S. C. Vidyabhushan, Chapter II of Section II.

Essential/recommended readings

1. Vidyabhushan, Satish Chandra, A History of Indian Logic, MLBD, Delhi, 1962. (Chapter III of Section I & Chapter II of Section II only)
2. Potter, Karl H., Encyclopaedia of Indian Philosophies, Vol. II, Motilal Banarsidass, Delhi, 1977.
3. Jhalkikar, Bhimacharya, Nyāyakośaḥ, Bhandarkar Oriental Research Institute, Poona, 1997 (reprint of fourth edition)
4. Athalye & Bodas, Tarkasaṅgraha, Mumbai, 1920. (only introduction & exposition of anumāna)
5. Shastri, Kuppaswami, A Primer of Indian Logic, Madras, 1951 (only introduction & exposition of anumāna).
6. Tarkasaṅgraha of Annambhaṭṭa (with Dipika), (Ed. & Tr. in Hindi), Kanshiram & Sandhya Rathore, MLBD, Delhi 2007.
7. Bagchi, S. S. – Inductive Logic : A Critical Study of Tarka & Its Role in Indian Logic, Darbhanga, 1951.
8. Chatterjee, S. C. & D. M. Datta - Introduction to Indian Philosophy, Calcutta University, Calcutta, 1968 (Hindi Translation also)
9. Chatterjee, S. C. – The Nyāya Theory of Knowledge, Calcutta, 1968.
10. Hiriyanna, M. - Outline of Indian Philosophy, London, 1956 (also Hindi Translation).
11. Jha, Harimohan – Bhāratīya Darśana Paricaya, Vol. I (Nyāya Darśana), Darbhanga.
12. Matilal, B. K. – The Character of Logic in India, Oxford, 1998.
13. Radhakrishnan, S. - Indian Philosophy, Oxford University Press, Delhi, 1990.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

DSE-2: Fundamentals of Ayurveda

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility Criteria	Prerequisite of the course
		Lecture	Tutorial	Practical/ Practice		
Fundamentals of Ayurveda	04	3	1	0	Semester II Passed	Working Knowledge of Sanskrit

Learning Objectives

Āyurveda is the most ancient but still a living healthcare system of India. This course will introduce students to the basic concepts of the Science of Āyurveda. The major objective of the course is to make the learners understand the basic principles and concepts of preventative and curative medicines, health maintenance, diet and nutrition, usage of commonly used spices and herbs and therapeutic procedures in Āyurveda

Learning outcomes

Graduates who read this course should be able to know the ancient tradition of Indian Medicine system, which talks about not only to the physical health but also a healthy lifestyle. After reading this paper students will know the history of Āyurveda through original sources of ancient medicine system as enshrined in the Sanskrit texts like Charaka Saṁhitā, Śuśruta Saṁhitā, Aṣṭāṅga Hridaya etc. and they will also get the basic knowledge of eight departments of Āyurveda. Second section of this paper is related to ancient physiology.

Detailed Syllabus

Unit I

15Hrs

Introduction to Āyurveda

History of Āyurveda in the pre-Charaka period, the two schools of Āyurveda: Dhanvantari and Punarvasu.

Ācāryas of Āyurveda: Charaka, Sushruta, Vagbhata, Madhava, Sharngadhara and Bhavamishra

Basic Principles of Āyurveda

- 1. The Pancamahābhūtas:** Ākāśa (Space), Vāyu (Air), Tejas or Agni (Fire), Jala (Water) and Prithivī (Earth).
- 2. The Triguṇas:** Sattva, Rajas and Tamas.
- 3. The Tridoṣas:** Vāta, Pitta and Kapha.
- 4. The Saptadhātus:** Rasa (fluid), Rakta (blood), Māmsa, Meda (fat) Asthi, Majjā and Śukra.
- 5. The Trayodaśāgnis:** Jatharāgni (gastric fire), Saptadhātvagni and Pancabhūtāgni.

6. The Trimalas: Purīṣā (faeces), Mūtra (urine) and Sveda (sweat).

Unit II

10Hrs

Eight branches of Āyurveda (Aṣṭāṅga Āyurveda):

1. Kāyçikitsā (General Medicine)
2. Kaumārābhṛtya (Pediatrics)
3. śalyatantra (Surgery)
4. Śālākya-Tantra (Ent. and Ophthalmology)
5. Bhūta Vidyā (Psychiatry Medicine).
6. Viṣa Vijñāna (Toxicology).
7. Rasāyana (Rejuvenates).
8. Vājīkaraṇa (Aphrodisiac).

Unit III

10Hrs

Lifestyle and Preventive Medicine:

1. Understanding Health and Disease in Āyurveda
2. Ayurvedic SvasthaVṛtta (Preventive Medicine): Seasonal regimen & Social Conduct and its effect on health.
3. **Carakasamhitā – Sūtra-sthānam (Tasyāśītiyādhyāya)**
Regimen of Six Seasons (Ṛtucharyā) : Hemanta (Early Winter), Śiśira (Winter), Vasanta (Spring), Grīṣma (Summer), Varṣā (Rainy) and Śarada (Autumn).

Unit IV

10Hrs

Diagnosis of illness (Roga-Parīkṣaṇa)

Eight ways of diagnosing illness-
Nāḍī (Pulse Examination), Mūtra (Urine Examination), Mala (Stool Examination), Jihvā (Tongue Examination), Śabda (Speech Examination), Sparśa (Touch Examination), Dṛk (Vision Examination), and Ākriti (Appearance).

Pancha kosha

The holistic concept of body in Indian Medicine Based on Taittirīyopaniṣad - Bhriguvalli, Anuvāka- (1-6)

Essential/recommended readings

1. आयुर्वेद का साहित्यिक इतिहास, हिन्दी साहित्य सम्मेलन, इलाहाबाद.
2. Singh R.H., Body, Mind, Spirit – Integrative Medicine in Ayurveda, Yoga and Nature Cure - Chowkhamba Surbharti Pratishthanam, Varanasi, I 2009
3. V.B. Athavale, Basic Principles of Āyurveda, ChaukhambaSanskrit Pratishthan New Delhi, 2005.
4. Priya Vrat Sharma, Essentials of Āyurveda: Sodasangahṛdayam, MotilalBanarsidass Publishers, 1999

Suggested readings

1. Bhagavan Dash, Vaidya, and Acarya Manfred M. Junius, A Handbook of Āyurveda, Concept Publishing Co., New Delhi, 1987.
2. Bhishagratna, Kaviraj Kunjalal, ed., translator. (2002). Sushruta Samhita Volumes I and II. Varanasi, India: Chowkhamba Sanskrit Series.

3. Charak Samhita E-text: <http://www.charakasamhita.com/> 7.
http://www.tkdil.res.in/tkdil/langdefault/ayurveda/Ayu_Principles.asp?GL=#q1
4. K. R. Srikantha Murthy, Illustrated Susruta Samhita, ChaukhambaOrientalia, 2012
5. M.S. Valiathan, An Introduction to Āyurveda Paperback, Universities Press (India) Private Limited, 2013
6. M.S. Valiathan, The Legacy of Suśruta, Universities Press, 2007
7. Ravi DattaTripathi, Vāgbhaṭa's Aṣṭāṅg-saṅgraha, ChowkhambaSanskrit Pratishthanam, Delhi., 2011.
8. ShanthaGodagama, The Handbook of Āyurveda, North Atlantic Books, 2004
9. Sharma, Priyavrit V., ed., translator. (1981-1994). Charaka Samhita, Vols. 1 - 4, Chaukhamba Sanskrit Series, Varanasi, India: Varanasi, India: Chowkhamba SanskritSeries.
10. Sharma, Ram Karan and Bhagawan Dash, Vaidya, eds., translators (1992 – 2000). CharakaSamhita Vols. 1 – 6. Varanasi, India.Chaukhamba Sanskrit Series]
11. Srikrishnamurthy, K.R. Srikantha, translator. (1991-1992). Vagbhata, AstangaHridayamVols. 1 and 2. Varanasi, India: Krishnadas Academy
12. Srikrishnamurthy, K.R. Srikantha, translator. (2001). Sharangadhara Samhita: A treatise on Āyurveda. Varanasi, India: ChaukhambaOrientalia.
13. Susruta (Author), Kunja Lal Bhishagratna, An English Translation of the Sushruta Samhita, Based on Original Sanskrit Text. Edited and Published by KavirajKunja Lal Bhishagratna. with a Full ... Notes, Comperative Views, Index, Glossary, Nabu Press, 2012

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

DSE-3: Computational Linguistics for Sanskrit

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Prerequisite of the course
		Lecture	Tutorial	Practical/ Practice		
Computational Linguistics for Sanskrit	04	3	1	0	Semester II Passed	Basic knowledge of Computer and Sanskrit

Learning Objectives

This course is supposed to familiarise the students with modern technology in the field of Computational linguistics and language technology and prepare the students for next level of Computational understanding in Sanskrit. After covering these topics in Computational Linguistics (CL), the students will learn the tools and techniques of CL and also do the detailed survey and learn various methodologies used in the field.

Learning outcomes

The course-level learning outcomes that a student of this course is required to demonstrate are indicated below:

- Learn the basics of Theoretical Concepts of Computational Linguistics.
- Learn the basic concepts of the various Applied Areas of Computational Linguistics e.g. Morphological Analyzer/Speech/Speaker Recognition, Speech Synthesis, Text to Speech, Language Analysis, Understanding, Generation, Natural Language Interface, Text Processing and Machine Translation etc.
- Learn the basic concept of databases for data Storage.
- Students will learn the Survey of Computational Linguistics.

Detailed Syllabus

Unit I

12Hrs

Theoretical Concepts of Computational Linguistics:

Language and Communication, Levels of Language, Phonemes, Morphemes, POS, Lexicon, Syntax, Semantics, Discourse, Natural Language vs Artificial Language, Speech and Language, Grammars. Computer Intelligent Interaction (HCII), Human Processing of Languages vs Computer Processing of Natural Languages, Rule based vs Statistical Processing, Machine Learning, Annotation of Language, Standards, Unicode, and Language Resources.

Unit II

09Hrs

Survey of the Sanskrit Computational Linguistics

Unit III

12Hrs

Applied Areas of Sanskrit Computational Linguistics

Morphological Analyzer
Speech/Speaker Recognition
Speech Synthesis,
Text to Speech
Language Analysis
Language Understanding
Language Generation
Natural Language Interface
Text Processing
Machine Translation

Unit IV

12Hrs

Data Storage:

An Introduction to Databases
Databases and Database Systems,
Architecture of Database Systems
Historical Perspective of Database Systems.
Basics of MS SQL Database

Essential/recommended readings

1. Chandra Subhash (2021). भाषासंगणन (Language Computing), Upasana Publications, New Delhi, India, ISBN: 978-93-87677-05-0.
2. Chandra Subhash (2017). मशीनी अनुवाद (Machine Translation) यूजीसी सीबीसीएस स्कीम के तहत बीए (संस्कृत) के एईईसी (AEEC)-3 के पाठ्यक्रम पर आधारित. Vidya Nidhi Prakashana, New Delhi, India, ISBN 978-93-85539-52-7.
3. Bharti A., R. Sangal, V. Chaitanya, "NL, Complexity Theory and Logic" in Foundations of Software Technology and Theoretical Computer Science, Springer, 1990.
4. Gazdar G. and C. Mellish, NLP in Prolog, Wokingham: Addison Wesley, 1989.
5. Gazdar, G. and C. Mellish, NLP in Lisp, Wokingham: Addison Wesley, 1989.
6. Grishman, R., Computational Linguistics: An introduction, Cambridge University Press, 1986.
7. Grosz, Barbara J. (et al.) Readings in NLP, (ed.) LA: Morgan Kaufmann, 1990
8. Kenneth A. Lambert, 2011, Fundamentals of Python: First Programs, Cengage Learning.
9. Nath Jha, Girish (ed.), 2010, Sanskrit Computational Linguistics, Springer. Verlag, Germany, 2010.
10. Ruslan Mitkov, Oxford handbook of computational linguistics, Oxford University Press, 2005.
11. Dan Jurafsky, James H. Martin, 2000, Speech and Natural Language Processing, Prentice Hall.
12. R. Elmasri, S.B. Navathe, Fundamentals of Database Systems (5th Ed.), Pearson Education.

Suggested readings

1. Chandra, Subhash and Jha, GN. Computer Processing of Nominal Inflections in Sanskrit: Methods and Implementations, CSP, UK, 2012.

2. Sanskrit Computational Linguistics symposium 1-2: Springer Verlag LNCS 5402 G Huet, A Kulkarni and P Scharf (eds), Proceedings of the 1st and 2nd International Symposium, 2009.
3. Sanskrit Computational Linguistics symposium 3: Springer Verlag LNCS 5406 A Kulkarni, G Huet (eds), Proceedings of the 3rd International Symposium, Jan 15 - 17, 2009, Hyderabad.
4. Grishman, R., Computational Linguistics: An introduction, Cambridge University Press, 1986.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

DSE-4: Web Application Development for Sanskrit

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Prerequisite of the course
		Lecture	Tutorial	Practical/ Practice		
Web Application Development for Sanskrit	04	3	1	0	Semester II Passed	Basic knowledge of Computer and Sanskrit

Learning Objectives

This course is intended to familiarize the students with the modern technology of web publishing, web page development in Sanskrit and other Indian languages.

Learning outcomes

The course-level learning outcomes that a student of this course is required to demonstrate are indicated below:

- Learn the basic concepts of web page development.
- Learn the basic concepts about HTML, CSS and Java Scripts.
- Learn the basic concepts of Typing tools in Devanagari Unicode.

Detailed Syllabus

Unit I 12Hrs

Brief Introduction to Web Applications for Sanskrit

Front End
Web Server
Back End

Unit II 12Hrs

Front End and Back End development in Sanskrit

Basics of Hyper Text Markup Language (HTML)
Basics of Cascading Style Sheets (CSS)
Basics of Data storage (files)
Basics of Data Bases

Unit III 09Hrs

Web Servers

Basics Java-Scripts (JS)
Basics of Python

Unit IV

12Hrs

Typing Tools for Unicode Devanagari (Sanskrit)

- Computer program for typing
- Online typing tools
- Voice typing tools
- Mobile Typing

Essential/recommended readings

1. Chandra Subhash (2021). भाषासंगणन (Language Computing), Upasana Publications, New Delhi, India, ISBN: 978-93-87677-05-0.
2. Chandra Subhash (2017). मशीनी अनुवाद (Machine Translation) यूजीसी सीबीसीएस स्कीम के तहत बीए (संस्कृत) के एईईसी (AEEC)-3 के पाठ्यक्रम पर आधारित. Vidya Nidhi Prakashana, New Delhi, India, ISBN 978-93-85539-52-7.
3. Various e-resources and online tools suggested by teachers

Suggested readings

1. HTML Tutorial - W3Schools: <https://www.w3schools.com/html/>
2. CSS Tutorial - W3Schools: <https://www.w3schools.com/css/default.asp>
3. JS Tutorial - W3Schools: <https://www.w3schools.com/js/default.asp>
4. Python Tutorial- W3Schools: <https://www.w3schools.com/python/default.asp>
5. SQL Tutorial- W3Schools: <https://www.w3schools.com/sql/default.asp>

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

DSE-5: Environmental Awareness in Sanskrit Literature

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Prerequisite of the course
		Lecture	Tutorial	Practical/ Practice		
Environmental Awareness in Sanskrit Literature	04	3	1	0	Semester II Passed	Working Knowledge of Sanskrit

Learning Objectives

The main objective of this course is to make the students acquainted with the basic concepts of Indian Environmental Science and salient features of environmental awareness as reflected in Vedic and Classical Sanskrit literature. The National culture of every country depends on its environmental and climatic conditions and human behaviour towards natural resources. Nature- friendly thoughts reflected in Sanskrit Literature have benefited the human race for long. Many religious practices were framed by ancient thinkers as a tool to protect nature and natural resources.

Learning outcomes

After completing this course, students will realize themselves to be a part of Nature and Nature, intern, belongs to all creatures. They will learn to be a more careful about the utilization and preservation of natural resources. This will make them better citizens of the world.

Detailed Syllabus

Unit I

12Hrs

Science of Environment: Definition, Scope and Modern Crises:

Modern Challenges and Crises of Environment: Global warming, Climate change, Ozone depletion, explosively increase in Pollution, Decrease in underground water level, River pollution, Deforestation in large scale. Natural calamities such as flood, draft and earthquakes.

Environmental Consciousness in Sanskrit Literature:

Concept of 'Mother Earth' and worship of Rivers in Vedic literature; Brief survey of environmental issues such as protection and preservation of mother nature, planting trees, and water preservation techniques as propounded in the Sanskrit Literature. Buddhist and Jain concepts of ecology, protection of trees, love for animals and birds.

Unit II

12Hrs

Environment Awareness in Vedic Literature:

Environmental Issues and Eco-system in Vedic Literature

Divinity to Nature, Co-ordination between all natural powers of universe; Equivalent words **for Environment in Atharvaveda:** 'Vṛtavṛta' (12.1.52), 'Abhivarah,' (1.32.4.), 'Avṛtah' (10.1.30), 'Parivṛta' (10.8.31); **five basic elements of universe covered by environment : Earth, Water, Light, Air, and Ether. (Aitareya Upaniṣad 3.3)**

Three constituent elements of environment: Jala (water), Vāyu (air), and Oṣadhi (plants) (Atharvaveda, 18.1.17).

Natural sources of water in five forms: rain water (Divyah), natural spring (Sravanti), wells and canals (Khanitrimah), lakes (Svayamjah) and rivers (Samudrarthah) (Rgveda, 7.49.2).

Environment Preservation in Vedic Literature:

Five elementary sources of environment preservation: *Parvat* (mountain), *Soma* (water), *Vayu* (air), *Parjanya* (rain) and *Agni* (fire) (Atharvaveda, 3.21.10); Environment Protection from Sun (Rgveda, 1.191.1-16, Atharvaveda, 2.32.1-6, Yajurveda, 4.4.10.6); Congenial atmosphere for the life created by the Union of herbs and plants with sun rays (Atharvaveda, 5.28.5); Vedic concept of Ozone-layer *Mahat ulb'* (Rgveda, 10.51.1; Atharvaveda, 4.2.8); Importance of plants and animals for preservation of global ecosystem; (Yajurveda, 13.37); Eco friendly environmental organism in Upaniṣads (*Bṛhadāraṇyaka Upaniṣad*, 3.9.28, *Taittiriya Upaniṣad*, 5.101)

Unit III

12Hrs

Environment Awareness in Puranas and Classical Sanskrit Literature:

Environmental Awareness and Tree plantation :

Planting of Trees in Purāṇas as a pious activity (*Matsya Purāṇa*, 59.159; 153.512 ; *Varāha Purāṇa* 172. 39), **Various medicinal trees to be planted in forest by king (Śukranīti, 4.58-62)** Plantation of new trees and preservation of old trees as royal duty of king (*Arthaśāstra*, 2.1.20); **Punishments for destroying trees and plants (Arthaśāstra, 3.19)**, Plantation of trees for recharging under ground water (*Bṛhatsaṁhitā*, 54.119)

Environmental Awareness and Water management :

Various types of water canals 'Kulyā' for irrigation : canal originated from river 'Nādimatr mukha kulyā', canal originated from near by mountain 'Parvataparsva vartini kulyā', canal originated from pond, 'Hṛdasrta kulyā', **Preservation of water resources 'Vāpi -kūpa -taḍāga' (Agnipurāṇas, 209-2; V.Ramayana, 2.80.10-11); Water Harvesting system in Arthaśāstra (2.1.20-21); Underground Water Hydrology in Bṛhatsaṁhitā (Dakāgalādhyāya, chapter-54);**

Unit IV

09Hrs

Universal Environmental Issues in the Literature of Kalidasa:

Eight elements of Environment and concept of 'Aṣṭamūrti' Siva (*Abhijñānaśākuntalam*); Preservation of forest, water resources, natural resources; protection of animals, birds and plant in Kalidasa's works, Environmental awareness in *Abhijñānaśākuntalam* Drama, Eco- system of Indian monsoon in *Meghdūt*, Seasonal weather conditions of Indian sub continent in *ṛtusamhara*, Himalayan ecology in *Kumārasambhava*, Oceanography in *Raghuvamśa* (canto-13).

Essential/recommended readings

1. कौटिलीय अर्थशास्त्र —हिन्दी अनुवाद —उदयवीर शास्त्री, मेहरचन्द लछमनदास,

दिल्ली, 1968.

2. बृहत्संहिता— वराहमिहिर विरचित, हिन्दी अनुवाद— बलदेव प्रसाद मिश्र, खेमराज श्रीकृष्णदास प्रकाशन, मुम्बई.
3. यजुर्वेद— हिन्दी अनुवाद सहित, सातवलेकर, श्रीपाद दामोदर, पारडी
4. शुक्रनीति — हिन्दी अनुवाद, ब्रह्मशंकर मिश्र, चौखम्बा संस्कृत सीरीज, वाराणसी, 968.
5. श्रीमद्वाल्मीकिरामायण — हिन्दी अनुवाद सहित, (सम्पा०) जानकी नाथ शर्मा, (1 —2 भाग) गीताप्रेस, गोरखपुर.
6. ठाकुर, आद्यादत्त— वेदों में भारतीय संस्कृति, हिन्दी समिति, लखनऊ, 1967.
7. तिवारी, मोहन चन्द — अष्टाचक्रा अयोध्या: इतिहास और परम्परा, उत्तरायण प्रकाशन, दिल्ली, 2006.
8. विद्यालंकार, सत्यकेतु — प्राचीन भारतीय शासनव्यवस्था और राजशास्त्र, सरस्वती सदन, मसूरी, 1968.
9. सहायकचशिवस्वरूपकच प्राचीन भारत का सामाजिक एवं आर्थिक इतिहास, मोतीलाल बनारसीदास, दिल्ली, 2012 कौटिलीय अर्थशास्त्र — हिन्दी अनुवाद — उदयवीर शास्त्री, मेहरचन्द लछमनदास, दिल्ली, 1968.
10. बृहत्संहिता— वराहमिहिर विरचित, हिन्दी अनुवाद— बलदेव प्रसाद मिश्र, खेमराज श्रीकृष्णदास प्रकाशन, मुम्बई.
11. यजुर्वेद— हिन्दी अनुवाद सहित, सातवलेकर, श्रीपाद दामोदर, पारडी
12. शुक्रनीति — हिन्दी अनुवाद, ब्रह्मशंकर मिश्र, चौखम्बा संस्कृत सीरीज, वाराणसी, 968.
13. श्रीमद्वाल्मीकिरामायण — हिन्दी अनुवाद सहित, (सम्पा०) जानकी नाथ शर्मा, (1 —2 भाग) गीताप्रेस, गोरखपुर.
14. ठाकुर, आद्यादत्त— वेदों में भारतीय संस्कृति, हिन्दी समिति, लखनऊ, 1967.
15. विद्यालंकार, सत्यकेतु — प्राचीन भारतीय शासनव्यवस्था और राजशास्त्र, सरस्वती सदन, मसूरी, 1968.
16. सहायकचशिवस्वरूपकच प्राचीन भारत का सामाजिक एवं आर्थिक इतिहास, मोतीलाल बनारसीदास, दिल्ली, 2012
17. अग्निपुराण - हिंदी अनुवाद तारिणीश झा एवं घनश्याम त्रिपाठी, हिंदी साहित्य सम्मलेन, इलाहाबाद, 1998
18. ईशोपनिषद - गीता प्रेस, गोरखपुर संस्करण
19. तैत्तिरीयोपनिषद - ईशादिदशोपनिषद, दिल्ली, 1964
20. बृहदारण्यकोपनिषद - (108 उपनिषद) ज्ञानखंड, सम्या० श्री एम. शर्मा, शांति कुंज, हरिद्वार, 1997
21. ऐतरेयोपनिषद - (108 उपनिषद) ज्ञानखंड, सम्या० श्री एम. शर्मा, शांति कुंज, हरिद्वार,

1997

22. मत्स्यपुराण – आनंदाश्रय संस्कृत सीरीज, पूजा, 1907
23. ओझा, डी.डी., विज्ञान और वेड, साइंटिफिक पब्लिशर्स, जोधपुर, 2005
24. द्विवेदी, कपिल देव, वेदों में विज्ञान, विख्याति अनुसंधान परिषद्, यदोई 2004
25. पंडा, पी. के. , कालिदास का साहित्य आधुनिक परिप्रेक्ष्य में, विद्यानिधि प्रकाशन, दिल्ली
I 2009
26. सेमवाल, श्री कृष्णा (सम्या०), 'संस्कृत वाङ्मये कृषि विज्ञानम्' दिल्ली संस्कृत अकादमी,
2006
27. *Arthashastra of Kautilya*—(ed.) **Kangale, R.P. Delhi, Motilal Banarasidas 1965**
28. Atharvaveda samhita.(2 Vols — (Trans.) R.T.H. Griffith, Banaras 1968.
29. Ramayana of Valmaki (3 Vols)— (Eng. Tr.) H.P. Shastri, London, 1952-59.
30. **Rgveda samhita (6 Vols)— (Eng. Tr.) H.H. Wilson, Bangalore, 1946**
31. Bhandarkar, R.G.— *Vaishnavism, Saivism and Minor Religious Systems*, Indological
Book House, Varanasi, 1965
32. **Das Gupta, SP— *Environmental Issues for the 21st Century*, Amittal
Publications, New Delhi, 2003**
33. Dwivedi, OP, Tiwari BH — *Environmental Crisis and Hindu Religion*,
Gitanjali Publishing House, New Delhi, 1987
34. Dwivedi, OP — *The Essence of the Vedas*, Visva Bharati Research Institute,
Gyanpur, Varanasi, 1990
35. Pandya, Smta P. — *Ecological Renditions in the Scriptures of Hinduism – I* (article)
Bulletin of the Ramakrishna Mission Institute of Culture.
36. Kiostermair, Klaus—*Ecology and Religion: Christian and Hindu Paradigms* (article)
Jornal of Hindu-Christian Studies, Butler university Libraries, Vol.6, 1993

**Examination scheme and mode: Subject to directions from the
Examination Branch/University of Delhi from time to time**

DSE-6: Art of Balanced Living

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the Course			Eligibility criteria	Prerequisite of the course
		Lecture	Tutorial	Practical/ Practice		
Art of Balanced Living	04	3	1	0	Semester II Passed	Working Knowledge of Sanskrit

Learning Objectives

This course aims at getting the students acquainted with the Art of living as found in Sanskrit literature . It also intends to make the students work on human resource management for being more effective and productive in day to day life situations.

Learning outcomes

After the completion of this course, the learners will be well informed about the various concepts, components and issues propounded by the philosophical and religious literature in Sanskrit

Detailed Syllabus

Unit I

12Hrs

Method of Self-presentation: Hearing (śravaṇa), Reflection (manana) & meditation (nididhyāsana) - (Bṛhadāraṇyakopaniṣad, 2.4.5) and Vedantasara
Concentration: Concept of Yoga: (Yogasūtra, 1.2); Restriction of fluctuations by practice (abhyāsa) and passionlessness (vairāgya) :(Yogasūtra, 1.12-16)

Unit II

09Hrs

Eight aids to Yoga (aṣṭāṅgayoga): (Yogasūtra - 2.29, 30, 32, 46, 49, 50; 3.1-4).
Yoga of action (kriyāyoga): (Yogasūtra, 2.1)
Four distinct means of mental purity (cittaprasādana) leading to oneness: (Yogasūtra - 1.33)

Unit III

09Hrs

Refinement of Behaviour: Means of improving behaviour:
Jñāna-yoga – Gita Ch. II – 14,15,16,19, Ch XIII- 11,12,14,15,16,19,20,21,23,29,31,32
dhyāna-yoga – VI – 24 to 27, 30, 32,

Unit IV

15Hrs

Bhakti-yoga – Gita Ch. IX – 17,22,23,27,29,34 ; Ch XI – 10,11,12, 13; Ch. - XII – 4, 6 to 12, 20 Karma : A natural impulse, essentials for life journey, harmony with the universe, an ideal duty and a metaphysical dictate - Gītā, Ch. – III 5, 8, 10-16, 20 & 21

Essential/recommended readings

1. वेदान्तसार: राममूर्ति शर्मा नैशनल पब्लिशिंग हाउस दिल्ली ।
2. पातञ्जल योग दर्शन: सुरेश चन्द्र श्रीवास्तव, चौखंबा सुरभारती प्रकाशन, वाराणसी 2008.
3. भगवद्गीता : गीताप्रेस, गोरखपुर
4. उपनिषद् रहस्य, एकादश उपनिषद्, महात्मा नारायण स्वामी, गोविन्द राम हासानन्द, दिल्ली

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time