# BA (Prog.) with SANSKRIT AS MAJOR

## DISCIPLINE SPECIFIC CORE COURSE, DISCIPLINE B 5:
## DSC-11: Sanskrit Literature: Katha-Kavya

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/Practice | | |
| (Discipline B 5) Sanskrit Literature: Katha-Kavya DSC – 11 | 04 | 3 | 1 | 0 | 12th Passed | Working Knowledge of Sanskrit |

**Learning Objectives:**

This course aims to get the students acquainted with the outline of Sanskrit Katha Kavya through texts Pañcatantram and Hitopadesh with the General Introduction to Sanskrit Literature

**Learning Outcomes:**

The students will learn the essence of the ways of life depicted and enjoined in the Katha Kavya of Sanskrit language & Literature. They will also learn various aspects and forms of Sanskrit as one of the modern Indian Language through the practice of easy and simple Sanskrit texts of Katha Kavya. The stories prescribed in the texts will help the students to develop an understanding of the moral and ethical values that will be useful in their day today life situations and asset of life. They will be familiar with the general history of Sanskrit Literature and with the style and contents of the works of eminent literary figures. This course will enhance the skill of chaste Sanskrit pronunciation as well as competence and performance of language. This will help them translate and explain the prescribed Sanskrit texts in their native language.

**Syllabus**

**Unit-I:** **12 hrs**

**Panchatantram: Aparikshitakarakam (पञ्चतन्त्रम्: अपरीक्षितकारकम्)**

Kshapanakakatha (**क्षपणककथा**), Brahmaninakulakatha (**ब्राह्मणीनकुलकथा**), Lobhavishta-Chakradharkatha (**लोभाविष्टचक्रधरकथा**)

**Unit-II:** **12 hrs**

**Sinha-Karakabrahmankatha (सिंहकारकब्राह्मणकथा)**

**Murkha-brahmanakatha (मूर्खब्राह्मणकथा)**

**Matsyamandukkatha (मत्स्यमण्डूककथा)**

**Rakshashrgalkatha (राक्षसशृगालकथा)**

**Unit-III** **12 hrs**

**Hitopdeshah : Mitralabhah (हितोपदेशः : मित्रलाभः)**

**Vriddhavyagraha-Lubdhvirakatha (वृद्धव्याघ्र-लुब्धविप्रकथा)**

**Unit-IV** **09 hrs**

**Tradition of Kathakavya in Sanskrit Literature**
(संस्कृतसाहित्य में कथाकाव्य की परम्परा)
**Origin and Development of Kathakavya**
(कथाकाव्य का उद्भव और विकास)
**Panchtantra, Hitopdesa, Kathasaritsagar, Vetalpanchavimsatika, Simhasanadwatrimsika and Purusapariksha**
(पञ्चतन्त्र, हितोपदेश, कथासरित्सागर, वेतालपञ्चविंशतिका, सिंहासनद्वात्रिंशिका और पुरुषपरीक्षा)

## Essential/recommended readings:


1. **पञ्चतन्त्रम्, श्रीविष्णुशर्माप्रणीत, व्याख्याकार-पाण्डेय, श्रीश्यामाचरण, मोतीलाल बनारसीदास, वाराणसी, दिल्ली, प्रथम संस्करण: वाराणसी**, 1975
2. **हितोपदेश, श्रीनारायणपण्डितविरचित, सम्पादक-प्रो. बालशास्त्री, चौखम्बा सुरभारती प्रकाशन, वाराणसी, संस्करण**, 2015
3. हितोपदेश, पण्डित जीवानन्द विद्यासागर, सरस्वती प्रेस कलकत्ता ।
4. पञ्चतन्त्रम्, श्यामाचरण पाण्डेय (व्या.), विष्णु शर्मा, मोतीलाल बनारसीदास, दिल्ली, 1975
5. M.R. Kale, Pancatantram (ed. and trans.), Motilal Banarasidass, Delhi 1999
6. Chandra Rajan, Pancatantram (trans.) Penguin Classics, Penguin Books.


## Suggested Readings:


1. रमाशंकर त्रिपाठी, संस्कृत साहित्य का प्रामाणिक इतिहास, कृष्णदास अकादमी, वाराणसी
2. उमाशंकर शर्मा 'ऋषि', संस्कृत साहित्य का इतिहास, चौखम्बा सुरभारती, वाराणसी
3. बलदेव उपाध्याय, संस्कृत साहित्य का इतिहास, शारदा निकेतन, वाराणसी

4. A Collection of Ancient Hindu Tales (ed.) Franklin Edgerton, Johannes Hertel, 1908.
5. Krishnamachariar, History of Classical Sanskrit Literature, MLBD, Delhi
6. Dasgupta S.N., A History of Sanskrit Literature: Classical Period, University of Calcutta, 1977.
7. A.B. Keith, History of Sanskrit Literature (हिन्दी अनुवाद, मंगलदेव शास्त्री, मोतीलाल बनारसीदास, दिल्ली)

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

## DISCIPLINE SPECIFIC CORE COURSE, DISCIPLINE B 6:
## DSC-12: Indian Aesthetics

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/Practice | | |
| (Discipline B 6) Indian Aesthetics DSC - 12 | 04 | 3 | 1 | 0 | Passed in Semester-IV | Working Knowledge of Sanskrit |

### Learning Objectives:

Indian aesthetics is a potent field for the study of literary criticism. It has developed as an independent discipline today, which deals with the historically determined essence of human values, their creation, perception, appreciation and assimilation. It is the science and philosophy of essential analysis of all the fine arts. Indian perception accepts poetry, drama, music, architecture, iconography and painting as independent Arts. The main objective of this paper is to give its brief overview with reference to major trends of Indian Aesthetics.

### Learning Outcomes:

This course will enable students to identify the real essence of Beauty propounded by Indian rhetoricians. After the completion of the course the learner will come across the Indian deliberation on aesthetic experience in the form of Rasa and its process. The participant will be able to appreciate the various artistic mods of expressions of Beauty in general and poetry in particular. The course will help the student peep into the historical evolution of the Indian science of aesthetics.

### Syllabus

### Unit-I: 12 hrs

**Aesthetics ( Saundaryaśāstra), its nature and components**

Beauty (Saundarya): its definition, nature and components : vaya,rūpa, vacana, hāva, Discussion of synonyms of the term Beauty(Saundarya) : ramaṇīyatā, śucitā, lāvaṇya, cārutā, kānti, vicchitti, madhuratā, mugdhatā, manohāritā, śrī.

### Unit-II: 09 hrs

**Aesthetic experience ( Rasa)**

Nature of rasa (Aesthetic experience) according to Sāhityadarpaṇa, aesthetic enjoyment – eternal bliss, the ultimate reality (ānandamayatā, alaukikatā)

## Unit-III 12 hrs

**The process of Aesthetic experience (Rasa)**

Constituents of rasa: bhāva (human feelings and emotions) vibhāva (causes or determinants), anubhāva (voluntary gestures), sāttvika bhāva (Involuntary gestures), vyabhicāri bhava (transitory states) and sthāyibhāva(basic mental states), sahṛdaya / sāmājika (Connoisseur / Spectator). anukārya, anukartā, sādhāraṇīkaraṇa (Generalization), four mental stages of rasa realization: vikāsa (cheerfulness), vistāra(exaltation), kṣobha (agitation), vikṣepa (perturbation). number of rasas according to Bharat

## Unit-IV 12 hrs

**Aesthetic elements (saundarya - tattva)**

Art as the mode of expression of saundarya –in fine arts (Architecture, Sculpture and Painting), Main aesthetic elements of literary arts (Poetry and Drama) : alaṅkāra, rīti, dhvani,vakrokti & aucitya.

**Prominent thinkers of Indian Aesthetics**

Bharata, Bhāmaha, Vāmana, Daṇḍī, Ānandavardhana Abhinavagupta, Kuntaka, Mahimabhaṭṭa, Kṣemendra, Vishvanātha and Jagannātha.

## Essential/recommended readings:


1. Sāhityadarpaṇa of Vishvanatha, (Based on karikas3/1-28).
2. Kane P.V., *History of Sanskrit Poetics* pp.352-391,
3. Upadhyaya, Baladeva, *Sanskrit Ālocanā* (for six schools)
4. Pandey, Kantichandra: *Comparative Aesthetics,* vol.1 Chowkhamba Sanskrit series office Varanasi, 2008
5. चतुर्वेदी ब्रजमोहन, भारतीय सौन्दर्यदर्शन, मध्यप्रदेश हिन्दी ग्रन्थ अकादमी, पृ० 5—12, 22—34, 37-42, 42-60,61-76
6. पाण्डेय कान्तिचन्द्र स्वतन्त्र कलाशास्त्र, प्रथम भाग पृ. 593—625.
7. पाण्डेय कान्तिचन्द्र, स्वतन्त्र कलाशास्त्र, प्रथम भाग पृ. 593—625.


## Suggested Readings:


1. Gnoli, R. : *The Aesthetic Experience according to Abhinavagupta*, Chowkhamba Sanskrit series office Varanasi.
2. उपाध्याय बलदेव संस्कृत—आलोचना, हिन्दी समिति, सूचना विभाग, उ. प्र., 1963.
3. कृष्णकुमार अलंकारशास्त्र का इतिहास, साहित्य भण्डार,मेरठ,1998
4. Coomarswami A: *Introduction to Indian Art,* Theosophical Society, Adyar, 1956.
5. कृष्णकुमार अलंकारशास्त्र का इतिहास, साहित्य भण्डार,मेरठ,1998

6. पाण्डेय, कान्तिचन्द्र स्वतन्त्र कलाशास्त्र, प्रथम तथा द्वितीय भाग, चौखम्भा संस्कृत सीरीज वाराणसी 1967, 1978.

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

# BA (Prog.) with SANSKRIT AS Non-Major/ Minor

## DISCIPLINE SPECIFIC CORE COURSE, DISCIPLINE B 5: DSC-6: Sanskrit Literature: Katha-Kavya

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/Practice | | |
| (Discipline B 5) Sanskrit Literature: Katha-Kavya DSC – 6 | 04 | 3 | 1 | 0 | 12th Passed | Working Knowledge of Sanskrit |

**Learning Objectives:**

This course aims to get the students acquainted with the outline of Sanskrit Katha Kavya through texts Pañcatantram and Hitopadesh with the General Introduction to Sanskrit Literature

**Learning Outcomes:**

The students will learn the essence of the ways of life depicted and enjoined in the Katha Kavya of Sanskrit language & Literature. They will also learn various aspects and forms of Sanskrit as one of the modern Indian Language through the practice of easy and simple Sanskrit texts of Katha Kavya. The stories prescribed in the texts will help the students to develop an understanding of the moral and ethical values that will be useful in their day today life situations and asset of life. They will be familiar with the general history of Sanskrit Literature and with the style and contents of the works of eminent literary figures. This course will enhance the skill of chaste Sanskrit pronunciation as well as competence and performance of language. This will help them translate and explain the prescribed Sanskrit texts in their native language.

**Syllabus**

**Unit-I:** **12 hrs**

**Panchatantram: Aparikshitakarakam (पंचतन्त्रम्: अपरीक्षितकारकम्)**

Kshapanakakatha (**क्षपणककथा**), Brahmaninakulkatha (**ब्राह्मणीनकुलकथा**), Lobhavishta-Chakradharkatha (**लोभाविष्टचक्रधरकथा**)

**Unit-II:** **12 hrs**

**Sinha-Karakabrahmankatha** (सिंहकारकब्राह्मणकथा)

**Murkha-brahmanakatha** (मूर्खब्राह्मणकथा)

**Matsyamandukkatha** (मत्स्यमण्डूककथा)

**Rakshashrgalkatha** (राक्षसशृगालकथा)

**Unit-III** **09 hrs**

**Hitopdeshah : Mitralabhah** (हितोपदेशः : मित्रलाभः)

**Vriddhavyagraha-Lubdhvirakatha** (वृद्धव्याघ्र-लुब्धविप्रकथा)

**Unit-IV** **12 hrs**

**Tradition of Kathakavya in Sanskrit Literature**
(संस्कृतसाहित्य में कथाकाव्य की परम्परा)
**Origin and Development of Kathakavya**
(कथाकाव्य का उद्भव और विकास)
**Panchtantra, Hitopdesa, Kathasaritsagar, Vetalpanchavimsatika, Simhasanadwatrimsika and Purusapariksha**
(पंचतन्त्र, हितोपदेश, कथासरित्सागर, वेतालपञ्चविंशतिका, सिंहासनद्वात्रिंशिकाश् और पुरुषपरीक्षा)

## Essential/recommended readings:


7. **पञ्चतन्त्रम्, श्रीविष्णुशर्माप्रणीत, व्याख्याकार-पाण्डेय, श्रीश्यामाचरण, मोतीलाल बनारसीदास, वाराणसी, दिल्ली, प्रथम संस्करण: वाराणसी**, 1975
8. **हितोपदेश, श्रीनारायणपण्डितविरचित, सम्पादक-प्रो. बालशास्त्री, चौखम्बा सुरभारती प्रकाशन, वाराणसी, संस्करण**, 2015
9. पञ्चतन्त्रम्, श्यामाचरण पाण्डेय (व्या.), विष्णु शर्मा, मोतीलाल बनारसीदास, दिल्ली, 1975
10. M.R. Kale, Pancatantram (ed. and trans.), Motilal Banarasidass, Delhi 1999
11. Chandra Rajan, Pancatantram (trans.) Penguin Classics, Penguin Books.
12. हितोपदेश, पण्डित जीवानन्द विद्यासागर, सरस्वती प्रेस कलकत्ता ।


## Suggested Readings:


8. रमाशंकर त्रिपाठी, संस्कृत साहित्य का प्रामाणिक इतिहास, कृष्णदास अकादमी, वाराणसी ।
9. A Collection of Ancient Hindu Tales (ed.) Franklin Edgerton, Johannes Hertel, 1908.
10. बलदेव उपाध्याय, संस्कृत साहित्य का इतिहास, शारदा निकेतन, वाराणसी

11. Krishnamachariar, History of Classical Sanskrit Literature, MLBD, Delhi
12. उमाशंकर शर्मा 'ऋषि', संस्कृत साहित्य का इतिहास, चौखम्बा सुरभारती, वाराणसी
13. Dasgupta S.N., A History of Sanskrit Literature: Classical Period, University of Calcutta, 1977.
14. A.B. Keith, History of Sanskrit Literature (हिन्दी अनुवाद, मंगलदेव शास्त्री, मोतीलाल बनारसीदास, दिल्ली)

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

# DSE-13: Basic Principles of Pāṇinian Grammar

## 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 | | |
| Basic Principles of Pāṇinian Grammar | 04 | 3 | 1 | 0 | Nil | Nil |

## Learning Objectives

This course introduces the basics of Pāṇinian grammar. It provides information related to the grammar written by Pāṇini. The core concept of Paninian grammar will be introduced. The main aim of this course is to introduce the structure of Ashtadhyayi and richness of the Indian linguistic tradition for those who are not Sanskrit scholars but are curious to know about the scientific literature in Sanskrit.

## Learning outcomes

The students will get an overview of the Paninian grammar. Within the field of Sanskrit studies, the field of vyākaraṇa (grammar) is said to be the core foundation upon which everything else is built. It will be a deep exploration of the study of grammar starting from absolute scratch. Students will be able to learn how to study Paninian Grammar.

## Detailed Syllabus

**Unit I**

**Introduction to Ashtadhyayai**

Introduction to Pāṇini
General information of his grammar
Current Pāṇinian tradition
Structure of the Ashtadhyayi
The Phonemic Components: Alphabest (Mahashwara Sutra)
Pratyaharas

**Unit II**

**Core Concept of Ashtadhyayi**

Types of Sutras
The concept of Anuvritti, Adhikara, Samjna
Decoding the meaning of the sutras
Technical Terms of Panini

**Unit III**

**Core Concept of Ashtadhyayi**

Decoding the meaning of the sutras
Role of Various types of Sutras
Utsarga and Apavada
Brief Introduction to Sanskrit Suffixes: Sup, Tin, Krit, Taddhita

**Unit IV**

**Databases of Panini**

Sutrapatha
Dhatupatha:
Classification Dhatus: Gana (10), Pada (3), Idagama (3), karma, ac numbers, anubandha, aadivarna, antyavarna, upadhavarba
Brief Introduction to Dhatus, Lakar
Ganapatha

## Essential/recommended readings


1. The Aṣṭādhyāyī Sūtrapāṭha of Panini, with Vārtikas, Gaṇa, Dhātupāṭha, Pāṇinīya-śikṣā and Paribhāṣāpāṭha, second edition, edited by C. Sankara Rama Shastri, printed and published by The Shri Bala Manorama Press, Mylapore, Madras, 1937.
2. The Aṣṭādhyāyī of Pāṇini, translated into English by Shrish Chandra Vasu, first published in 1891, reprinted by Motilal Benarsidass, Delhi, 1962.
3. The Ashtadhyayi of Panini. Vol. 6. Satyajnan Chaterji, 1897.
4. Pawate, Ishtalingappa Siddharamappa. The structure of the Ashtadhyayi. Amar Prakashan, 1987.
5. Mahalakshmi, A. Soumya, and Minal Moharir. "Ashtadhyayi—An Experimental Approach to Enhance Programming Languages and Compiler Design Using." *Recent Findings in Intelligent Computing Techniques: Proceedings of the 5th ICACNI 2017, Volume 3* 709 (2018): 3.
6. Subbanna, Sridhar, and Shrinivasa Varakhedi. "Computational structure of the Ashtadhyayi and conflict resolution techniques." *Sanskrit Computational Linguistics* (2009): 56-65.
7. Dr. Naresh Jha, Ashtadhyayi of Panini (Sanskrit With Hindi Text), 2014, Chaukhamba Surbharati Prakashan.
8. Jha, Girish N. "The system of Panini." *Language in India* 4.2 (2004).

9. Sharma, R. N. "Astadhyayi of Panini. Vol. 1-2. N." *Delhi. Voloshina, OA 2019a:[Types of Sutra Rules in the Grammar of Panini]. Indoevropeiskoe yazykoznanie i klassicheskaya filologiya [Indo-European linguistics and classical philology]* 23 (2000): 170-177.

**Additional Resources:**

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

# DSE-14: Introduction to Ancient Indian Mathematics

## 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 | | |
| Introduction to Ancient Indian Mathematics | 04 | 3 | 1 | 0 | Twelfth Passed | Working Knowledge of Sanskrit |

## Learning Objectives

This course provides an in-depth exploration of the rich heritage of ancient Indian mathematics, covering various mathematical concepts, techniques, and achievements that emerged in the Indian subcontinent over centuries. Students will delve into the works of renowned mathematicians such as Aryabhata, Brahmagupta, and Bhaskara, among others. The course aims to highlight the significant contributions of ancient Indian mathematics to various branches of mathematics and its influence on contemporary mathematical thought.

## Learning outcomes

By the end of this course, students will be able to:

1. Understand the historical and cultural context of ancient Indian mathematics.
2. Familiarize themselves with the fundamental mathematical concepts and techniques developed by ancient Indian mathematicians.
3. Analyze and interpret ancient Indian mathematical texts.
4. Recognize the contributions of ancient Indian mathematics to modern mathematical fields.
5. Appreciate the interconnectedness of ancient Indian mathematics with other areas of knowledge, including astronomy, philosophy, and linguistics.

## Detailed Syllabus

**Unit: I**

**Introduction to Ancient Indian Mathematics**

Overview of ancient Indian mathematical traditions
Significance of ancient Indian mathematics in global mathematical history
Major mathematical works and their authors

**Unit: II**

Life and works of Aryabhata, Brahmagupta, Baskaracharya

**Unit: III**

Contribution of Aryabhata, Brahmagupta, Baskaracharya

**Unit: IV**

**Some Essentials of ancient Mathematics**

Decimal place value system and its origins
Numerical notations and symbols used in ancient Indian mathematics
Basic arithmetic operations (addition, subtraction, multiplication, division) in ancient Indian mathematics
Geometrical concepts and constructions in ancient Indian mathematics
Connection between astronomy and mathematics in ancient India

## Essential/recommended readings

1. "Sulba Sutras" - These ancient texts, composed between 800 BCE and 200 BCE, present mathematical techniques for constructing altars and fire pits used in Vedic rituals. They contain geometric and algebraic methods, including the Pythagorean theorem.
2. "Aryabhatiya" by Aryabhata - Written in the 5th century CE, this work is a foundational text of Indian mathematics. It covers various mathematical topics, including arithmetic, algebra, trigonometry, and astronomy. It introduces the concept of zero and provides an approximation for the value of pi.
3. "Brahmasphutasiddhanta" by Brahmagupta - Composed in the 7th century CE, this treatise covers topics such as arithmetic, algebra, geometry, and astronomy. It introduces negative numbers and presents solutions to quadratic equations.
4. "Lilavati" by Bhaskara II - This 12th-century CE work focuses on arithmetic and algebra. It contains a wide range of mathematical problems and their solutions, along with geometric and combinatorial techniques.
5. "Ganita Sara Sangraha" by Mahaviracharya - Written in the 9th century CE, this treatise provides a comprehensive overview of arithmetic and algebra. It covers topics such as number theory, fractions, series, and solutions to linear and quadratic equations"Yuktibhasa" by Jyesthadeva - Composed in the 16th century CE, this work explores advanced topics in algebra and calculus. It introduces the Kerala school's method of calculating with infinite series and provides a comprehensive understanding of calculus in ancient India.
6. "Siddhanta Shiromani" by Bhaskara II - This monumental work, written in the 12th century CE, comprises four parts: Lilavati, Bijaganita, Grahaganita, and Goladhyaya. It covers arithmetic, algebra, geometry, and astronomy, offering insights into advanced mathematical concepts and calculations.
7. "Vedic Mathematics" by Bharati Krishna Tirtha - This modern compilation, published in the 20th century, presents the mathematical principles found in the Vedas. It provides techniques for mental calculations, quick multiplication, division, and square roots, highlighting the mathematical wisdom of ancient India.

## Reference readings

1. "Mathematics in Ancient India" by T.K. Puttaswamy and S.K. Rangaswami - This comprehensive book explores the development of mathematics in ancient India, covering various mathematical concepts, techniques, and contributions by Indian mathematicians.

2. "A Source Book in Indian Mathematics" edited by K. Sarma - This anthology brings together translations of key texts in ancient Indian mathematics, providing direct access to original sources and mathematical concepts developed in the Indian subcontinent.
3. "The History of Hindu Mathematics: A Sourcebook" by Bibhutibhusan Datta and Avadhesh Narayan Singh - This book presents an in-depth examination of mathematical ideas and techniques from ancient Indian texts, including arithmetic, algebra, geometry, and astronomy.
4. "Mathematics in India" by Kim Plofker - Offering a scholarly analysis of Indian mathematical traditions, this book covers topics such as number systems, arithmetic, algebra, geometry, and trigonometry, with a focus on historical context and cultural influences.
5. "Indian Mathematics: Engaging with the World from Ancient to Modern Times" edited by Agathe Keller, Clemency Montelle, and Christine Proust - This collection of essays explores various aspects of Indian mathematics, from its ancient roots to contemporary developments, including contributions to astronomy, linguistics, and philosophical thought.
6. "History of Ancient Indian Mathematics" by C. N. Srinivasiengar - This book provides a historical overview of ancient Indian mathematics, tracing its evolution from the Indus Valley Civilization to the medieval period, highlighting the contributions of notable mathematicians and the impact on subsequent mathematical developments

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

# DSE-15: Basic Skills for Research Paper and Dissertation

## 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 | | |
| **Basic Skills for Research Paper and Dissertation Writing** | **04** | **3** | **1** | **0** | **12th Passed** | **Working Knowledge of Sanskrit** |

## Learning Objectives

This course will introduce the basic methods and skills to write a research dissertation and paper.

## Learning outcomes

The students will learn the basics of writing research dissertations or papers and they will acquire the skills needed for the same. They will get a clear idea about the standards to be followed and techniques to be used for their research writings.

## Detailed Syllabus

**Unit I** **12 hrs**

**Theoretical concept of Research**

Introduction, Objectives and Types of Research
Outline of Research Work
Topic Selection and Writing Methods
Material Collection: Primary and Secondary
E-Recourses and Research Tools

**Unit II** **09 hrs**

**Dissertation/Paper Editing Tools**

Typing tools for Unicode Devanagari
Editing Tools: Microsoft Word and Google Docs

**Unit III** **12 hrs**

**Basics of Research Paper Writing**

Topic Selection
Review of Literature
Drafting the body

Revision/Editing
Major Components of a Research Papers
Abstract, Keywords, Background and Introduction, Review of Literatures, Objective, Material (data) and methodology, result and discussions, conclusions, finding, future direction of research, acknowledgement, references

**Unit IV** **12 hrs**

**Dissertation Writing Skill**

Overview of the dissertation
Major steps: Proposal, Dissertation Writing, Editing/Review, Presentation and Submission
Essential Elements of Research Proposal:
- Research topic selection
- A brief description of the proposed thesis
- Preliminary outline of the proposed research
- Survey
- Reference list

Structure of Dissertation
- Title Page
- Acknowledgement
- Abstract
- Table of Contents
- List of figures
- List of Tables
- List of Appendixes
- Dissertation Chapters
- References Lists

## Essential/recommended readings


1. Teacher's notes, ppt, and handout
2. http://www.makeuseof.com/tag/5-powerpoint-tips-improve-presentation-skills-overnight/
3. https://www.slideshare.net/subagini/effective-presentation-skills-28512891
4. http://www.free-power-point-templates.com/articles/18-tips-to-improve-presentation-skills/
5. Yelikar, 2009, Essentials of Research Methodology & Dissertation Writing ((Fogsi), Jaypee Brothers Medical Publishers.


## Additional Resources:

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

# DSE-16: Research Methodology for Sanskrit Studies

## 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 | | |
| Research Methodology for Sanskrit Studies | 04 | 3 | 1 | 0 | 12th Passed | Working Knowledge of Sanskrit |

## Learning Objectives

This course will introduce the basics of research methodology and the methodologies followed in the research field of Arts or Sanskrit. The primary emphasis will be on the study of research methods applicable to undertaking research in Sanskrit.

## Learning outcomes

After completing this course the students will get an overview of the various research methodologies. They will be able to understand the specific procedures or techniques to be used to identify, select, process, and analyze information about a research topic.

## Detailed Syllabus

**Unit I** **12 hrs**

**Theoretical concept of Research**

Introduction, Objectives, and Types of Research
Outline of Research Work
Research Methodologies
Topic Selection and Writing Methods
Material Collection: Primary and Secondary
E-Recourses and Research Tools

**Unit II** **12 hrs**

**Literature Review**

Brief Introduction of Survey
Techniques/Methods of Survey
Tools and Techniques of Survey
Step of the Survey

**Unit III** **12 hrs**

**Referencing**

What is Referencing?
Step of Referencing
How to make references?
Citation and Citation in Text, Various patterns of Citation in Text and Sample
Various Software for Referencing
Components of referencing, Book, Dictionary, Journal, Conference, News Paper, Magazine, Report, Government Publications, Thesis, Dissertation, Web pages, Internet Resources, Personal Communications (Written, oral and email), Lectures, Video, DVD, Films, etc.)
Introduction of Various Style Sheets of Referencing.
Detail Introduction of the above Style for Sanskrit.
Creation Methods of Reference List and Samples.

**Unit IV** **09 hrs**

**Transliteration**

Transliteration Schemes
International Alphabet of Sanskrit Transliteration (IAST)
Indian languages Transliteration (ITRANS)
Introduction to available computational tools for converting
Devanagari Texts to IAST and TTRANS.

## Essential/recommended readings


1. Teacher's notes, ppt, and handouts
2. http://www.makeuseof.com/tag/5-powerpoint-tips-improve-presentation-skills-overnight/
3. https://www.slideshare.net/subagini/effective-presentation-skills-28512891
4. http://www.free-power-point-templates.com/articles/18-tips-to-improve-presentation-skills/
5. Yelikar, 2009, Essentials of Research Methodology & Dissertation Writing ((Fogsi), Jaypee Brothers Medical Publishers.


## Additional Resources:

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