Department of Sanskrit
University of Delhi
Under Graduate Course for Sanskrit
B.A. (Hons.) Under UGCF-22

GE-6
Machine Translation: Tools and Techniques

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	Department Offering the Course
		Lecture	Tutorial	Practical/ Practice			
Machine Translation: Tools and Techniques	04	3	1	0	Class XII Pass	Nil	Sanskrit

Learning Objectives:

This course will introduce the theory and practice of computer based translations and expose the students to the internal processes and inter module interactions in a typical Machine Translation (MT) system

Learning Outcomes:

The course-level learning outcomes that a student of this course will be able to demonstrate are indicated below:

- Learn the origin and Development of Machine Translation.
- Basic Introduction of Machine Translation.
- Human vs Machine Translation.
- Concepts to ideal various methodologies used on Machine Translation System.
- Using guidelines of the Machine Translation system: Google and Bing.
- Evaluation and Challenges in Machine Translation

SYLLABUS OF GE-6

Unit: I **Credit: 01**
Introduction and History of Machine Translation

- History and Survey of Machine Translation Systems.
- List of Major MT System for Indian Languages: Google Translate and Bing by Microsoft.

Unit: II **Credit: 01**
Theoretical Concepts of Machine Translation:

- Human vs Computer translation of languages.
- Basics of Machine Translation
- Tools and Techniques of Machine Translation
- Source and Target Language

Unit: III **Credit: 01**

Machine Translation (MT) Approaches

- Rule Base MT
  Transfer-based
- Interlingual and Dictionary Based
- Statistical MT
  Example Based MT
- Hybrid MT

Unit: IV **Credit: 01**

Evaluation of MT

- Evaluation of MT
- Challenges in Machine Translation
- Ambiguity and Acceptability

[D] References:

Compulsory Readings:

1. Chandra, Subhash. मशीनी अनुवाद (Machine Translation) यूजीसी सीबीसीएस स्कीम के तहत बीए (संस्कृत) के एईईसी (AEEC)-3 के पाठ्यक्रम पर आधारित. Vidyanidhi Prakashana, New Delhi, India, ISBN: 9789385539527.
2. Sergei Nirenburg, H. L. Somers, Readings in Machine Translation, MIT Press (MA)
3. Philipp Koehn, Statistical Machine Translation, Cambridge University Press.
4. Sergei Nirenburg, Jaime Carbonell, Masaru Tomita, Editors: Kenneth Goodman, Machine Translation: A Knowledge-Based Approach, Morgan Kaufmann Publishers Inc. San Francisco, CA, USA, 1994
5. Amba Kulkarli, Machine translation activities in India: A survey, In proceedings of workshop on survey on Research and Development of Machine Translation in Asian Countries, Thailand, May 13-14, 2002.

[E] Teaching Learning Process:

A variety of approaches to teaching-learning process, including lectures, seminars, tutorials, workshops, peer teaching and learning, practicum and project-based learning, substantial laboratory-based practical component and experiments in this course, open-ended project work, games, technology-enabled learning, etc. will need to be adopted to achieve this.

Lecture based Teaching Learning on the Basics of Machine Translation, Detailed Survey of MT tools and Techniques for Background will be covered in this course.

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