

LT5632: HISTORY OF MACHINE TRANSLATION

Effective Term

Semester B 2024/25

Part I Course Overview

Course Title

History of Machine Translation

Subject Code

LT - Linguistics and Translation

Course Number

5632

Academic Unit

Linguistics and Translation (LT)

College/School

College of Liberal Arts and Social Sciences (CH)

Course Duration

One Semester

Credit Units

3

Level

P5, P6 - Postgraduate Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

LT5603 Theory of Translation, LT5411 Computational Linguistics

Equivalent Courses

CTL5632 History of Machine Translation

Exclusive Courses

Nil

Part II Course Details

Abstract

This course aims to enable students to grasp the history of machine translation from a computational linguistic point of view as well as from the translation perspective. The different approaches adopted for machine translation show how research efforts

have been spent to solve translation problems using the computer. The historical development will lay a solid foundation for students to understand how the technology has evolved due to the deepening understanding of computational linguistics and translation studies, and the advent of new tools, both material and conceptual ones. Upon completing the course, students should be able to approach machine translation with a more comprehensive outlook.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Analyze and evaluate the different theoretical orientations adopted by different approaches to machine translation;		x	x	x
2	Criticize in a linguistically informed manner what they have learnt in this course in the evaluation of MT systems of different generations;		x	x	x
3	Discover and reflect on problem areas in MT approaches from a translation perspective.		x	x	x

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

LTAs		Brief Description	CILO No.	Hours/week (if applicable)
1	1	Lectures: Lectures will be used to motivate students to learn the subject matter, explain the key concepts and provide ample examples from the reference materials and MT systems.	1, 2, 3	2 hours
2	2	Reading on their own: Students should read reference materials and supplementary materials on the topics so as to enable the concepts to sink into their mind.	1, 2, 3	2.5 hours

3	3	Tutorial discussion and hands-on exercises: These will be used to identify theoretical points of interest or concepts students do not fully master, and to allow students hands-on experience with MT systems.	1, 2, 3	1 hour
4	4	Blackboard: Blackboard and email will be used as a forum to encourage students to carry on their study a bit further and help them communicate with the teacher and classmates concerning the course.	1, 2, 3	0.5 hour

Assessment Tasks / Activities (ATs)

ATs		CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	A term paper on the history of MT with focus on one of the approaches and how that approach resolves a particular problem in human translation.	1, 2	40	A term paper that requires the students to do literature review as well as argue logically how a particular translation problem can be handled within one of the MT approaches.
2	A presentation about the evaluation of an MT system in the treatment of a certain linguistic aspect.	1, 3	40	A short presentation that requires the students to evaluate an MT system professionally
3	Classroom participation.	1, 2, 3	20	Students have to discuss critically and participate actively in the tutorial activities

Continuous Assessment (%)

100

Assessment Rubrics (AR)**Assessment Task**

Term paper. (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Ability to demonstrate competence in a selected topic on MT history

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal

(D) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

Presentation (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Ability to articulate a selected topic on MT history

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal

(D) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

Classroom participation (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Ability to meaningfully engage in class activities

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal

(D) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

Term paper. (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Ability to demonstrate competence in a selected topic on MT history

Excellent

(A+, A, A-) High

Good

(B+, B) Significant

Marginal

(B-, C+, C) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

Presentation (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Ability to articulate a selected topic on MT history

Excellent

(A+, A, A-) High

Good

(B+, B) Significant

Marginal

(B-, C+, C) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

Classroom participation (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Ability to meaningfully engage in class activities

Excellent

(A+, A, A-) High

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Part III Other Information**Keyword Syllabus**

The ALPAC report, information theory, HAMT, MAHT, FAMT, transfer-based MT, interlingual MT, dictionary-based MT, statistical MT, example-based MT, hybrid MT, the SYSTRAN system, the LOGOS system, the METAL system, the METEO system, the TRADOS system, evaluation.

Reading List**Compulsory Readings**

Title	
1	Carl, M. & Way, A. (eds.) (2003) Recent Advances in Example-based Machine Translation Dordrecht : Kluwer Academic Publishers.
2	Goutte, C. et al. (eds.) (2009) Learning Machine Translation, Cambridge, Mass. : MIT Press.
3	Hauenschild C., Heizmann S. (eds.) (1997) Machine Translation and Translation Theory, Berlin : Mouton de Gruyter.
4	Hutchins, W. J. (2000) Early Years in Machine Translation: Memoirs and Biographies of Pioneers Amsterdam : J. Benjamins.
5	Hutchins, W. J. & Somers, L. (1992) An Introduction to Machine Translation London : Academic Press.
6	Lehrberger J. & Bourbeau, L. (1988) Machine Translation : Linguistic Characteristics of MT Systems and General Methodology of Evaluation Amsterdam : J. Benjamins.
7	Nirenburg S. (1986) Machine Translation: Past, Present, Future Chichester : Ellis Horwood ; New York : Halsted Press.
8	Nirenburg S. et al. (eds.) (1992) Machine Translation: A Knowledge-based Approach San Mateo, Calif. : Morgan Kaufmann.
9	Nirenburg S., Somers, H. & Wilks, Y. (eds.) (2003) Readings in Machine Translation Cambridge, Mass. : MIT Press.
10	Slocum, J. Machine (1988) Translation Systems Cambridge : Cambridge University Press.

Additional Readings

Title	
1	Machine Translation, Springer, Netherlands.
2	Computational Linguistics, ACL
3	Language Resource and Evaluation.
4	Translation Studies (Routledge)
5	http://www.chinesecomputing.com/nlp/mt.html