

**City University of Hong Kong  
Course Syllabus**

**offered by Department of Linguistics and Translation  
with effect from Semester A 2022 / 23**

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**Part I Course Overview**

<b>Course Title:</b>	<u>History of Machine Translation</u>
<b>Course Code:</b>	<u>LT5632</u>
<b>Course Duration:</b>	<u>One Semester</u>
<b>Credit Units:</b>	<u>3</u>
<b>Level:</b>	<u>P5</u>
<b>Medium of Instruction:</b>	<u>English</u>
<b>Medium of Assessment:</b>	<u>English</u>
<b>Prerequisites:</b> <i>(Course Code and Title)</i>	<u>Nil</u>
<b>Precursors:</b> <i>(Course Code and Title)</i>	<u>LT5603 Theory of Translation, LT5411 Computational Linguistics</u>
<b>Equivalent Courses:</b> <i>(Course Code and Title)</i>	<u>CTL5632 History of Machine Translation</u>
<b>Exclusive Courses:</b> <i>(Course Code and Title)</i>	<u>Nil</u>

## Part II Course Details

### 1. 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.

### 2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs	Weighting (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick ✓ where appropriate)		
			A1	A2	A3
1.	Analyze and evaluate the different theoretical orientations adopted by different approaches to machine translation;		✓	✓	✓
2.	Criticize in a linguistically informed manner what they have learnt in this course in the evaluation of MT systems of different generations;		✓	✓	✓
3.	Discover and reflect on problem areas in MT approaches from a translation perspective.		✓	✓	✓
		100%			

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 self-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.*

### 3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.						Hours/week (if applicable)
		1	2	3				
1	<b>Lectures:</b> 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.	✓	✓	✓				2 hours
2	<b>Reading on their own:</b> Students should read reference materials and supplementary materials on the topics so as to enable the concepts to sink into their mind.	✓	✓	✓				2.5 hours
3	<b>Tutorial discussion and hands-on exercises:</b> 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 hour
4	<b>Blackboard:</b> 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.	✓	✓	✓				0.5 hour

### 4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.						Weighting	Remarks
	1	2	3					
Continuous Assessment: 100%								
<b>A term paper</b> on the history of MT with focus on one of the approaches and how that approach resolves a particular problem in human translation.	✓	✓					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 wi <sup>2</sup> 33□ne of the MT approaches.
<b>A presentation</b> about the evaluation of an MT system in the treatment of a certain linguistic aspect.	✓		✓				40%	A short presentation that requires the students to

								evaluate an MT system professionally
<b>Classroom participation.</b>	✓	✓	✓				20%	Students have to discuss critically and participate actively in the tutorial activities
Examination: % (duration: , if applicable)							100%	

## 5. Assessment Rubrics

*(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)*

Applicable to students admitted in Semester A 2022/23 and thereafter

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B)	Marginal (B-, C+, C)	Failure (F)
1. Term paper.	Ability to demonstrate competence in a selected topic on MT history	High	Significant	Basic	Not even reaching marginal levels
2. Presentation	Ability to articulate a selected topic on MT history	High	Significant	Basic	Not even reaching marginal levels
3. Classroom participation	<b>Ability to meaningfully engage in class activities</b>	High	Significant	Basic	Not even reaching marginal levels

Applicable to students admitted before Semester A 2022/23

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Term paper.	Ability to demonstrate competence in a selected topic on MT history	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Presentation	Ability to articulate a selected topic on MT history	High	Significant	Moderate	Basic	Not even reaching marginal levels
3. Classroom participation	<b>Ability to meaningfully engage in class activities</b>	High	Significant	Moderate	Basic	Not even reaching marginal levels

### Part III Other Information (more details can be provided separately in the teaching plan)

#### 1. Keyword Syllabus

(An indication of the key topics of the course.)

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.

#### 2. Reading List

##### 2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

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

##### 2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

1.	<i>Machine Translation</i> , Springer, Netherlands.
2.	<i>Computational Linguistics</i> , ACL
3.	<i>Language Resource and Evaluation</i> .
4.	<i>Translation Studies</i> (Routledge)
5.	<a href="http://www.chinesecomputing.com/nlp/mt.html">http://www.chinesecomputing.com/nlp/mt.html</a>