City University of Hong Kong
Course Syllabus

offered by Department of Linguistics and Translation
with effect from Semester A 2024 / 25

Part I   Course Overview

Course Title: Translation Tools Development

Course Code: LT5629

Course Duration: One Semester

Credit Units: 3

Level: P5

Medium of Instruction: English

Medium of Assessment: English

Prerequisites:
(Course Code and Title)   Nil

Precursors:
(Course Code and Title)   LT5411 Computational Linguistics

Equivalent Courses:
(Course Code and Title)   CTL5629 Translation Tools Development

Exclusive Courses:
(Course Code and Title)   Nil

Part II   Course Details

1. **Abstract**

This course aims at introducing students to some commonly used computer-aided translation tools and technology (e.g. term banks, translation memory, concordance, corpus processing tools, etc.), with special focus on the practical aspects of their design and development.   Students will acquire hands-on experience for/via developing prototype systems or self-contained modules of one or more of such tools. Basic programming concepts and techniques will be covered to enable students to write simple programs, and to implement simple systems through a series of guided exercises.

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.	Discuss and explore the typical design and implementation issues from a practical perspective for commonly used computer-aided translation tools.		✓	✓	
2.	Develop and apply basic programming concepts and techniques to write simple programs as translation aids.		✓	✓	✓
3.	Implement a prototype system or self-contained module of some translation tools.		✓	✓	✓
		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. Learning and Teaching Activities (LTAs)

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

LTA	Brief Description	CILO No.						Hours/week (if applicable)
		1	2	3				
1	**Lectures** to introduce various computer-aided translation tools, explain their design, and discuss the issues to consider for their implementation.	✓						2 hours
2	**Tutorial and practical sessions** to cover basic programming concepts and techniques, with exercises on writing computer programs.		✓					1 hour
3	**Guided exercises** for students to reinforce their programming skills and to gain hands-on experience for developing simple translation tools.			✓				

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 %								
Class participation, tutorial exercises and demos on various translation tools, and the practical aspects of their design and development.	✓						30%	
Assignments to practise and reinforce programming skills.		✓					30%	
Mini-project on translation tool development with written progress reports.			✓				40%	
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 before Semester A 2022/23 and in Semester 2024/25 & thereafter

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Class participation, tutorial exercises and demos 2. Assignments 3. Mini-project.	Knowledge, attitude, ability, creativity, accomplishment and performance in completing and/or presenting demons and/or assignments	1. Excellent knowledge of major issues, concepts, ideas, principles and techniques in machine translation and various approaches to developing translation tools. 2. Excellent, creative application of linguistic, computing and programming knowledge to basic language processing subtasks in machine translation. 3. Very active participation and high performance.	1. Good knowledge of major issues, concepts, ideas, principles and techniques in machine translation and various approaches to developing translation tools. 2. Good application of linguistic, computing and programming knowledge to basic language processing subtasks in machine translation. 3. Active participation and good performance.	1. Adequate knowledge of major issues concepts, ideas, principles and techniques in machine translation and various approaches to their solutions. 2. Fair application of linguistic, computing and programming knowledge to basic language processing subtasks in machine translation. 3. Adequate participation and fair performance.	1. Basic familiarity with the subject matter. 2. Marginal ability to apply basic linguistic, computing and programming knowledge to basic language processing subtasks in machine translation. 3. Marginal participation and marginal performance.	1. Poor familiarity with the subject matter. 2. Poor ability or fail to apply linguistic, computing and programming knowledge to basic language processing subtasks in machine translation. 3. Poor participation and poor performance.

Applicable to students admitted from Semester A 2022/23 to Summer Term 2024

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B)	Marginal (B-, C+, C)	Failure (F)
1. Class participation, tutorial exercises and demos 2. Assignments 3. Mini-project.	Knowledge, attitude, ability, creativity, accomplishment and performance in completing and/or presenting demons and/or assignments	4. Excellent knowledge of major issues, concepts, ideas, principles and techniques in machine translation and various approaches to developing translation tools. 5. Excellent, creative application of linguistic, computing and programming knowledge to basic language processing subtasks in machine translation. 6. Very active participation and high performance.	4. Good knowledge of major issues, concepts, ideas, principles and techniques in machine translation and various approaches to developing translation tools. 5. Good application of linguistic, computing and programming knowledge to basic language processing subtasks in machine translation. 6. Active participation and good performance.	4. Adequate basic knowledge of major issues concepts, ideas, principles and techniques in machine translation and various approaches to their solutions. 5. Fair or marginal application of linguistic, computing and programming knowledge to basic language processing subtasks in machine translation. 6. Adequate or marginal participation and fair performance. 7. Basic or marginal familiarity with the subject matter as a whole.	4. Poor familiarity with the subject matter. 5. Poor ability or fail to apply linguistic, computing and programming knowledge to basic language processing subtasks in machine translation. 6. Poor participation and poor performance.

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.)

   Computer-aided translation tools, software design and development

   Term bank, terminology management

   Linguistic corpora, corpus processing tools, corpus annotation, text markup, parallel text alignment, concordance

   Translation memory, Translation Memory eXchange, XML

   Information technology, language technology, database design and management, computational lexicography

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.	Lecture notes/slides for the course
2.	Selected papers/chapters on topics of machine translation
3.	Selected tutorials on programming tasks for implementation of machine translation system
4.	Selected tutorials from online resources

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

1.	Relevant chapters in the recommended reading list or from online tutorials
2.	Advanced and/or related topics on programming for system implementation

Recommended Reading
Text(s)

1. Eric S. Roberts. 2017. *Programming Abstractions in Java*. Boston: Pearson.
2. Sin-wai Chan. 2015. *The Routledge Encyclopedia of Translation Technology*. London: Routledge.
3. Pushpak Bhattacharyya. 2015. *Machine Translation*. Boca Raton: Taylor & Francis.
4. Herbert Schildt and Dale Skrien. 2013. *Java programming: A comprehensive introduction*. New York: McGraw-Hill.
5. Joseph Olive, Caitlin Christianson & John McCary (eds.). 2011. *Handbook of Natural Language Processing and Machine Translation*. New York: Springer.
6. Michael Hammond 2002. *Programming for Linguists: Java Technology for Language Researchers*. Oxford: Blackwell Publishers.
7. Oliver Mason. 2000.   *Programming for Corpus Linguistics: How to do text analysis with Java.* Edinburgh: Edinburgh University Press.

Online Resources

https://docs.oracle.com/javase/tutorial/
https://docs.oracle.com/javase/8/docs/api/