LT2231: INTRODUCTION TO LANGUAGE TECHNOLOGY

Effective Term
Semester A 2023/24

Part I Course Overview

Course Title
Introduction to Language Technology

Subject Code
LT - Linguistics and Translation
Course Number
2231

Academic Unit
Linguistics and Translation (LT)

College/School
College of Liberal Arts and Social Sciences (CH)

Course Duration
One Semester

Credit Units
3

Level
B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
CTL2231 Introduction to Language Technology

Exclusive Courses
Nil

Part II Course Details

Abstract

This course aims to teach students basic concepts and practical issues in language processing for implementation of representative general and linguistic application software and to teach students basic computer programming concepts and skills for writing simple language applications.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Identify basic issues of language technology in a bilingual context.		x	x	
2	Identify basic design principles of language technology applications, including electronic publishing, word processing, presentation and database management applications.		x	x	
3	Design, competently and creatively, and write simple computer programs that manipulate linguistic data as characters and strings.		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.

Teaching and Learning Activities (TLAs)

	TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Readings	Reading lecture notes, book chapters, articles and other kinds of supplementary materials.	1, 2, 3	
2	Lectures	Theories, concepts, models, explanations, illustrations, synthesis of readings, in-class activities.	1, 2, 3	
3		Discussions on exercises and homework assignments.	1, 2, 3	
4	Homework Assignments	Classwork and homework assignments that require students to apply concepts and theories and help them develop basic skills.	1, 2	

5	Programming Exercises	Learning basic programming concepts and skills.	3	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Exercises In-class participation, diligence and, where possible, willingness and ability to analyze and explore	1, 2	10	
2	Quizzes Mastery of concepts and techniques, ability to analyze and explore, ability to implement programs according to specifications. Questions will be set to test basic factual knowledge and skills. Questions will also be set to test students' understanding of key concepts, ability to critically analyze and explore and ability to implement programs according to specifications.	1, 2, 3	25	
3	Homework assignments Use of language technology software for text analysis	1, 2, 3	25	

Continuous Assessment (%)

60

Examination (%)

40

Examination Duration (Hours)

2

Assessment Rubrics (AR)

Assessment Task

1. Exercises

Criterion

Ability to engage in meaningful discussion and to complete tasks

Excellent (A+, A, A-)

Outstanding engagement in meaningful discussion and completion of tasks

Good (B+, B, B-)
Significant engagement in meaningful discussion and completion of tasks

Fair (C+, C, C-)
Fair level of engagement in meaningful discussion and completion of tasks

Marginal (D)
Basic engagement in meaningful discussion and completion of tasks

Failure (F)
Not even reaching basic level of engagement in meaningful discussion and completion of tasks

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Assessment Task
2. Quizzes

Criterion
Ability to demonstrate knowledge on theory and practice of language technology

Excellent (A+, A, A-)
Demonstrate excellent knowledge on theory and practice of language technology

Good (B+, B, B-)
Demonstrate significant knowledge on theory and practice of language technology

Fair (C+, C, C-)
Demonstrate fair level of knowledge on theory and practice of language technology

Marginal (D)
Demonstrate basic knowledge on theory and practice of language technology

Failure (F)
Not even demonstrating basic knowledge on theory and practice of language technology

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Assessment Task
3. Homework assignments

Criterion
Ability to use language technology software for text analysis

Excellent (A+, A, A-)
Demonstrate excellent proficiency in using language technology software and writing computer programs for text analysis

Good (B+, B, B-)
Demonstrate significant proficiency in using language technology software and writing computer programs for text analysis

Fair (C+, C, C-)
Demonstrate moderate proficiency in using language technology software and writing computer programs for text analysis

Marginal (D)

Demonstrate basic proficiency in using language technology software and writing computer programs for text analysis

Failure (F)

Not even reaching marginal proficiency in using language technology software and writing computer programs for text analysis

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Assessment Task

4. Examination

Criterion

Ability to demonstrate knowledge on theory and practice of language technology

Excellent (A+, A, A-)

Demonstrate excellent knowledge in the theory and practice of language technology and in writing computer programs

Good (B+, B, B-)

Demonstrate significant knowledge in the theory and practice of language technology and in writing computer programs

Fair (C+, C, C-)

Demonstrate fair knowledge in the theory and practice of language technology and in writing computer programs

Marginal (D)

Demonstrate basic knowledge in the theory and practice of language technology and in writing computer programs

Failure (F)

Not even demonstrating marginal level of knowledge in the theory and practice of language technology and in writing computer programs

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Part III Other Information

Keyword Syllabus

English and Chinese character encoding and manipulation of text data in a computer.
Fundamental principles and implementation issues of linguistic computer applications including electronic publishing, word processing, presentation and database management software.
Fundamental concepts and basic skills of computer programming for linguistic applications.

Reading List

Compulsory Readings

	Title
1	Lecture notes/slides for the course
2	Steven Bird, Ewan Klein, and Edward Loper. 2014. Natural Language Processing with Python – Analyzing Text with the Natural Language Toolkit. Accessed at http://www.nltk.org/book/ Or: Selected topics of Java programming from the Java Tutorials Online provided by Oracle at https://docs.oracle.com/javase/tutorial/ (Depending on whether the course is taught with Python or Java)
3	L.A. Bucki. 2002. Learning Computer Applications: Projects and Exercises. DDC Publishing.

Additional Readings

	Title
1	M. Campione and K Walrath. 1998. The Java Tutorial: Object-oriented programming for the Internet. Addison-Wesley
2	O. Masson. 2000. Programming for Corpus Linguistics: How to do text analysis with Java. Edinburgh University Press.
3	P.J. Pratt and J. Adamski. 2002. Concepts of Database Management, 4th edition. Course Technology, Thomson.
4	J. Pollock. JavaScript: A Beginner’ s Guide. Emeryville, California: McGraw-Hill, 2004.
5	P. Wilton. Beginning JavaScript. Indianapolis: Wiley, 2004.
6	張普. 1992. 漢語信息處理研究. 北京語言學院出版社.