

## National Tsing Hua University

## 中高級選讀英文〔科普閱讀〕

Fall 2024

<b>Course Number</b>	LANG 2000 _____	<b>Credits</b>	2	<b>Classroom</b>	請查閱校務資訊系統的課程資訊後填入
<b>Class hours</b>	<input type="checkbox"/> Monday <input type="checkbox"/> Tuesday <input checked="" type="checkbox"/> Wednesday <input type="checkbox"/> Thursday <input type="checkbox"/> Friday <input checked="" type="checkbox"/> 1:20P.M. – 3:10P.M. <input type="checkbox"/> 3:30P.M. – 5:20P.M. <input type="checkbox"/> _____ P.M. – 5 _____ P.M.				
<b>Course Type</b>	<input type="checkbox"/> EGP (English for general purposes) <input checked="" type="checkbox"/> EAP (English for academic purposes) <input type="checkbox"/> EOP (English for occupational purposes)				
<b>Language Level</b>	<input type="checkbox"/> B1 (中級) <input type="checkbox"/> B1-B2 <input checked="" type="checkbox"/> B2 (中高級) <input type="checkbox"/> B2+ <input type="checkbox"/> C1				
<b>Core Ability</b>	<input checked="" type="checkbox"/> comprehension/reception <input checked="" type="checkbox"/> communication/interaction <input type="checkbox"/> production				
<b>可選課學生身分別</b>	<input checked="" type="checkbox"/> 頂標生 <input checked="" type="checkbox"/> 前標生 <input type="checkbox"/> 中級生 <input type="checkbox"/> 初級生				
<b>Prerequisites</b>	修畢中高級英文一、二或中高級英文三				
<b>加簽說明</b>	本課程視狀況開放人工加簽最多 3 位學生，且僅接受第一堂課到課學生。				

**Instructor & Contact Information**

<b>Name</b>	<b>Email</b>	<b>Office &amp; Tel</b>	<b>Office Hour</b>
黃芸茵	<a href="mailto:yyhuang@gapp.nthu.edu.tw">yyhuang@gapp.nthu.edu.tw</a>	R207, GB II	Tuesday 1-3 pm

**Course Description**

Dive into the fascinating world of science through the lens of Munroe's humorous narrative in this engaging undergraduate course. We will explore how scientific knowledge can be used to solve real-world problems in various intriguing questions. Through guided readings and discussions, we will analyze how scientific concepts are communicated, evaluate the accuracy and clarity of scientific information presented, and consider the impact of storytelling techniques on public understanding of science.

**Primary aim**

This course aims to enhance students' scientific literacy, develop their critical thinking skills, and foster a deeper appreciation for the intersection of science and society. Additionally, through written assignments and presentations, students will have the opportunity to communicate their insights and reflections on the readings, further honing their ability to convey complex scientific ideas to diverse audiences.

**Subsidiary aim**

- Recall and describe the main ideas in the reading
- Explain and illustrate the main ideas with relevant examples

- Distinguish claims and facts in text.
- Evaluate the quality of the reported study with textual evidences.
- Enhance scientific literacy in both written and spoken English.
- Develop critical thinking skills and problem-solving skills for ill-defined problems.

### Corresponding CEFR Can-do statements

Reception	Reading	B2	Can understand in detail lengthy, complex texts, whether or not they relate to his/her own area of specialty, purposes, and using appropriate reference sources selectively. Has a broad active reading vocabulary, but may experience some difficulties with low-frequency idioms. [overall reading comprehension]	<b>EAP</b> <b>EOP</b>
		B2	Can read correspondence relating to his/her field of interest and readily grasp the essential meaning. [reading correspondence]	
		B2	Can scan quickly through long and complex texts, locating relevant details. [reading for orientation]	
		B2	Can quickly identify the content and relevance off news items, articles and reports on a wide range of professional topics, deciding whether closer study is worthwhile. [reading for orientation]	<b>EAP</b> <b>EOP</b>
		B2	Can understand articles and reports concerned with contemporary problems in which the writer adopts particular stances or viewpoints. [reading for information & argument]	
		B2+	Can obtain information, ideas and opinions from highly specialized sources within his/her field. [reading for information & argument]	<b>EAP</b> <b>EOP</b>
		B2+	Can understand specialized articles outside his/her field, provided he/she can use a dictionary occasionally to confirm his/her interpretation of terminology. [reading for information & argument]	<b>EAP</b> <b>EOP</b>
		B2	Can understand lengthy, complex instructions in his/her field, including details on conditions and warnings, provided he/she can reread difficult sections. [reading instructions]	<b>EAP</b> <b>EOP</b>
Interaction Spoken interaction	Speaking	B2	Can interact with a degree of fluency and spontaneity that makes regular interaction, and sustained relationships with native speakers quite possible without imposing strain on either party. [overall spoken interaction]	
		B2+	Can use the language fluently, accurately and effectively on a wide range of general, academic, vocational or leisure topics, marking clearly the relationships between ideas. [overall spoken interaction]	<b>EAP</b> <b>EOP</b>
		B2	Can take an active part in informal discussion in familiar contexts, commenting, putting point of view clearly, evaluating alternative proposals and making and responding to hypotheses. [informal discussion (with friends)]	
		B2	Can account for and sustain his/her opinions in discussion by providing relevant explanation, arguments and comments. [informal discussion (with friends)]	<b>EAP</b> <b>EOP</b>

	B2+	Can express his/her ideas and opinions with precision, present and respond to complex lines of argument convincingly. [informal discussion (with friends)]	<b>EAP</b> <b>EOP</b>
	B2	Can explain a problem which has arisen and make it clear that the provider of the service/customer must make a concession. [transactions to obtain goods & services]	<b>EOP</b>
	B2	Can give a clear, detailed description of how to carry out a procedure. [information exchange]	<b>EAP</b> <b>EOP</b>

#### University Student Core Competency Indicators

1. ability to communicate and express oneself in English 30%
2. ability to think critically and organize ideas logically in English) 30%
3. knowledge of English learning strategies and techniques 20%
4. ability to use existing English learning resources and development of independent self-learning habit 20%

#### Teaching Materials and References

Required reading	Selected articles from the following sources: Rovelli, C. (2016). Seven brief lessons on physics. Penguin Random House, UK. Munroe, R. (2015). What if? Serious scientific answers to absurd hypothetical questions. John Murray, London. Munroe, R. (2022). What if? 2 Additional serious scientific answers to absurd hypothetical questions. Riverhead Books, New York.
Additional materials	Munroe, R. (2015). Thing explainer: Complicated stuff in simple words. Houghton Mifflin Harcourt, Boston. Munroe, R. ((2019). How to: Absurd scientific advice for common real-world problems. Riverhead Books, New York.
Learning/Resource Platform	<a href="https://eeclass.nthu.edu.tw/">https://eeclass.nthu.edu.tw/</a>

#### Grading:

1.	Attendance and participation	20%
2.	Comprehension check	35%
3	Group summary (jigsaw reading) of required weekly reading (How to)	20%
4	Extended definition (individual oral presentation, keyword handout)	20%

5	Mini-presentation (Fav questions)	5%
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**Requirements & Rules:**

1. Actively participate in all class activities.
2. Complete and submit all written and non-written tasks on time.
3. Follow RCR guidelines. Students are accountable for the integrity of the work they submit.
4. Use of AI: Conditionally open. Regarding transparency and responsibility, you can choose to use AI for collaboration and mutual learning to enhance the quality of your work. If you do, you must briefly explain how generative AI was used.
5. [Leave request] Prior email explaining the date and the reason for absence should be sent to BOTH me and the TA.

**Teaching Activities:**

Lectures     Pair/Group discussion     Assignments     Oral presentations     Quizzes

**Classroom Languages:**

English   80   %      Mandarin   20   %

Weekly syllabus (subject to change)

Week	Date	Unit title / Topic	Class activities / Assignments	Main EGP/EAP/EOP language skills
1		Orientation	Quiz on the syllabus	- Understanding main ideas - Asking for clarification
2		Engineering - Machine-gun jetpack	- Quick Q&A on reading - Comprehension check - Group summary - Jigsaw reading/sharing	- Explaining the possible implications of events - Expressing and defending opinions - Exchanging and challenging ideas appropriately (in academic discussion)
3		Engineering – Lego bridge		
4		Engineering – Yoda (p.143)		
5		How to (on self-selected topics)	Group mini-project	- Paraphrasing - Summarizing - Expanding academic vocabulary and knowledge of definitions and parts of words
6		Physics – Expanding Earth	- Quick Q&A on reading - Comprehension check - Group summary - Jigsaw reading/sharing	- Explaining the possible implications of events - Expressing and defending opinions
7		Physics – Style time machine		

8		Physics – Relativistic baseball		- Exchanging and challenging ideas appropriately (in academic discussion)
9		How to (on self-selected topics)	Group mini-project	- Paraphrasing - Summarizing - Expanding academic vocabulary and knowledge of definitions and parts of words
10		Chemistry – Periodic wall of elements	- Quick Q&A on reading - Comprehension check - Group summary - Jigsaw reading/sharing	- Explaining the possible implications of events - Expressing and defending opinions - Exchanging and challenging ideas appropriately (in academic discussion)
11		Chemistry – Neutron bullet (p.280)		
12		Chemistry – Lethal Neutrinos		
13		How to (on self-selected topics)	Group mini-project	- Paraphrasing - Summarizing - Expanding academic vocabulary and knowledge of definitions and parts of words
14		Biology – No more DNA	- Quick Q&A on reading - Comprehension check - Group summary - Jigsaw reading/sharing	- Explaining the possible implications of events - Expressing and defending opinions - Exchanging and challenging ideas appropriately (in academic discussion)
15		Biology – Common cold		
16		Review and wrap-up	Fav questions & why	- Paraphrasing - Summarizing - Expressing and defending opinions

#### Academic Linguistic Skills Indicators

Reading	<input checked="" type="checkbox"/> Understanding of a range of academic vocabulary and grammatical structures
	<input type="checkbox"/> Understanding graphic presentation of data
	<input checked="" type="checkbox"/> Evaluating, comparing and critically analyzing graphic data
	<input type="checkbox"/> Identifying & applying appropriate reading techniques
	<input checked="" type="checkbox"/> Following descriptions of processes and sequences
	<input type="checkbox"/> Interpreting process diagrams and flowcharts (critical reading)

	<input type="checkbox"/> Analyzing reported statistics (critical reading)
	<input checked="" type="checkbox"/> Following discussions between multiple texts or reports
	<input type="checkbox"/> Comparing and synthesizing ideas and arguments
	<input type="checkbox"/> Taking notes
Listening	<input checked="" type="checkbox"/> Understanding description of data in spoken language
	<input type="checkbox"/> Understanding and evaluating a speaker's interpretation of data
	<input type="checkbox"/> Understanding references to graphic data
	<input type="checkbox"/> Following descriptions of processes and sequences
	<input checked="" type="checkbox"/> Following an account of the development of ideas over time
	<input checked="" type="checkbox"/> Following discussions between multiple speakers
	<input checked="" type="checkbox"/> Comparing and synthesizing ideas and arguments
Speaking/Discussion	<input checked="" type="checkbox"/> Discussing the meaning and implications of numerical data
	<input type="checkbox"/> Using statistical data in support of claims
	<input type="checkbox"/> Referring to graphics in support of claims
	<input type="checkbox"/> Describing research findings
	<input type="checkbox"/> Describing and explaining data
	<input checked="" type="checkbox"/> Exchanging and challenging ideas appropriately (in academic discussion)
	<input checked="" type="checkbox"/> Expressing and defending opinions
	<input checked="" type="checkbox"/> Explaining the possible implications of events
	<input type="checkbox"/> Explaining, comparing and interpreting sources (comparing literature on a topic)
	<input type="checkbox"/> Synthesizing sources and viewpoints (comparing literature on a topic)
	<input type="checkbox"/> Drawing conclusion from data (developing your own position on a topic)
	<input type="checkbox"/> Drawing cautious language for your own claim (developing your own position on a topic)
	<input type="checkbox"/> Creating a presentation to report results
Vocabulary	<input type="checkbox"/> Expanding academic vocabulary and knowledge of definitions and parts of words (prefixes, suffixes, roots, etc.)

Developing a sophisticated knowledge of lexical resources (that are used to determine referents, organize ideas, establish relationships between concepts, and develop cohesion within a text)

Getting familiar with discourse patterns (the structure of persuasive, argumentative, and informative texts)

Developing sentence structures and discourse patterns for academic competence (comparing, classifying, synthesizing, evaluating, and inferring)